Factors Considered in Determining that an Environmental Impact Statement is not Required. No significant environmental impacts were identified in the EA (attached). Impacts were analyzed for noise, hazardous materials and waste, earth resources, water resources, air quality, biological resources, cultural resources, socioeconomics, and environmental justice. Implementation of the lease renewal would not cause any significant adverse effects or impacts to any of the resource areas at DPG or on areas surrounding the property.

Conclusion. Based on the environmental impact analyses described in the EA, which is hereby incorporated into this FONSI, it has been determined that implementation of the Proposed Action would not have a significant impact on the quality of the natural or the human environment. Because no significant environmental impact would result from implementation of the Proposed Action or alternatives, an environmental impact statement is not required and will not be prepared.

Public Comment. Public comment was invited for a period of 30 days for the draft EA after publication of the Notice of Availability in the *Tooele Transcript, Deseret News, and Salt Lake City Tribune*. Comments or requests for information could be submitted to Mr. Michael Shane, 388th Range Squadron/RSO, Environmental Protection Specialist, 6066 Cedar Lane, Bldg. 1274, Hill AFB, Utah 84056-5812 or Michael.Shane@hill.af.mil within 30 days of the publication of the Notice of Availability. A copy of the draft EA was available for public review at the DPG library, Tooele City Library, and the Salt Lake City Public Library. No comments on the draft EA were received.

Date: 20 AUG 12

Scott C. Long
Colonel, U.S. Air Force
388th Fighter Wing Commander

Sarah E. Zabel
Colonel U.S. Air Force
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Report Documentation Page

Form Approved
OMB No. 0704-0188

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14. ABSTRACT

The U.S. Army Corps of Engineers has prepared environmental documentation for the proposed continued exclusive use of Department of the Army land located at U.S. Army Dugway Proving Ground by members of the U.S. Air Force. This environmental assessment (EA) addresses the potential environmental, socioeconomic, and cultural impacts of this proposal and its alternatives. Based on the environmental impact analyses described in this EA it has been determined that implementation of the Proposed Action would not have a significant impact on the quality of the natural or the human environment. Because no significant environmental impact would result from implementation of the Proposed Action, an environmental impact statement is not required and a Finding of No Significant Impact (FONSI) will be published in accordance with the National Environmental Policy Act.

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ENVIRONMENTAL ASSESSMENT
FOR THE
CONTINUED EXCLUSIVE USE OF DEPARTMENT OF THE ARMY LAND
LOCATED AT U.S. ARMY DUGWAY PROVING GROUND
BY MEMBERS OF THE U.S. AIR FORCE

Reviewed by:

Michael Shane
Environmental Protection Specialist
388th Range Squadron/RSO

Recommended by:

Scott C. Long
Colonel, U.S. Air Force
388th Fighter Wing Commander

Approved by:

75th Airbase Wing

Sarah E. Zabel
Colonel U.S. Air Force
75th Airbase Wing Commander

FINAL

ENVIRONMENTAL ASSESSMENT FOR THE CONTINUED EXCLUSIVE USE OF DEPARTMENT OF THE ARMY LAND LOCATED AT U.S. ARMY DUGWAY PROVING GROUND BY MEMBERS OF THE U.S. AIR FORCE

Prepared for:

U.S. Air Force 388th Fighter Wing

Prepared by:

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With technical assistance from:

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1202 Bergen Parkway, Suite 310
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July 2012

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LIST OF ACRONYMS

°F	degrees Fahrenheit
ACC	Air Combat Command
AFB	Air Force Base
AFPD	Air Force Policy Directive
ALCM	Air Launch Cruise Missile
ARPA	Archaeological Resources Protection Act
AST	aboveground storage tank
BMP	best management practice
BSP	Baker Strong Point
CEQ	Council on Environmental Quality
CFR	*Code of Federal Regulations*
CHWSF	Central Hazardous Waste Storage Facility
dBA	A-weighted decibels
DoD	U.S. Department of Defense
DPG	U.S. Army Dugway Proving Ground
EA	environmental assessment
EDR	Environmental Data Resources
EIAP	Environmental Impact Analysis Process
EIFS	Economic Impact Forecast System
EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESS	Electronic Scoring Site
FW	Fighter Wing
HWMP	Hazardous Waste Management Plan
ICRMP	Integrated Cultural Resources Management Plan
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netter Sensor System
LBP	lead-based paint
MUTES	Multiple Threat Emitter System
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NATO	North Atlantic Treaty Organization
NEPA	*National Environmental Policy Act*
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PCB	polychlorinated biphenyls
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
RANS	Range Squadron
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
RTV	rational threshold value
SOP	standard operating procedure
TSCA	Toxic Substances Control Act
USAEHA	U.S. Army Environmental Hygiene Agency
USAF	U.S. Air Force
USFWS	U.S. Fish and Wildlife Service

LIST OF ACRONYMS (continued)

UST	underground storage tank
UTTR	Utah Test and Training Range
VMAS	video measuring assessment systems
WAP	waste analysis plan
WISS	Weapons Impact Scoring System

FINAL
FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE CONTINUED EXCLUSIVE USE OF DEPARTMENT OF THE ARMY LAND LOCATED AT U.S. ARMY DUGWAY PROVING GROUND BY MEMBERS OF THE U.S. AIR FORCE

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] 1400-1508) for implementing the procedural provisions of the *National Environmental Policy Act* (NEPA) (42 U.S.C. 4321 et. seq.), and the United States Air Force (USAF) NEPA implementing regulations (32 CFR Part 989, et seq.), *Air Force Environmental Impact Analysis Process*, the USAF prepared an environmental assessment (EA) to identify and evaluate the potential environmental effects from renewing the 338th Fighter Wing (FW) lease with U.S. Army Dugway Proving Ground (DPG).

Purpose and Need. The purpose of the Proposed Action is to renew the 388th FW's existing lease for continued exclusive use of Department of the Army land located at DPG for continual operation of activities in support of the mission of the Utah Test and Training Range (UTTR). Renewal of the lease would allow the USAF to meet current and future mission requirements and objectives associated with the 388th FW. Meeting ongoing mission requirements necessitates repairing and upgrading the 388th Range Squadron (RANS) facilities; continuing current operational activities at the leased properties; improving the efficiency and effectiveness of testing and training activities with the ability to expand; and improving roadways used for testing and training access. Pursuant to NEPA and its implementing regulations, the USAF has prepared this EA to address the environmental and socioeconomic impacts of renewing the lease.

Description of the Proposed Action. The USAF 388th FW from Hill Air Force Base (AFB) is proposing to renew its existing lease for continued exclusive use of Department of the Army land located at DPG, Utah. In addition to the lease renewal, the 388th RANS is proposing to continue its current operations and activities associated with each property under the lease.

Alternatives. Two alternatives are evaluated in this EA.

Proposed Action Alternative. For the Proposed Action Alternative, the USAF proposes to renew its current lease with the Army for exclusive use of facilities and infrastructure on DPG. In addition, the USAF is proposing to continue current operations and activities associated with each property under the lease. This renewal would allow the 388th RANS to continue to use the facilities to provide support for testing and training activities conducted on the UTTR.

No Action Alternative. CEQ regulations require analysis of the No Action Alternative in an EA, for it serves as the baseline against which the impacts of the Proposed Action and alternatives will be evaluated. Accordingly, the No Action Alternative is evaluated in this EA.

Alternatives Considered and Eliminated from Further Analysis. The 388th RANS considered selecting an alternate location for conducting its operations. However, this alternative was determined to be cost prohibitive due to the need to establish the infrastructure that has already been put in place at DPG. In addition, no other large areas of uninhabited land with minimal proximity to private lands for USAF testing and training are available. This alternative was therefore, not carried forward for further analysis in the EA.

Factors Considered in Determining that an Environmental Impact Statement is not Required. No significant environmental impacts were identified in the EA (attached). Impacts were analyzed for noise, hazardous materials and waste, earth resources, water resources, air quality, biological resources, cultural resources, socioeconomics, and environmental justice. Implementation of the lease renewal would not cause any significant adverse effects or impacts to any of the resource areas at DPG or on areas surrounding the property.

Conclusion. Based on the environmental impact analyses described in the EA, which is hereby incorporated into this FONSI, it has been determined that implementation of the Proposed Action would not have a significant impact on the quality of the natural or the human environment. Because no significant environmental impact would result from implementation of the Proposed Action or alternatives, an environmental impact statement is not required and will not be prepared.

Public Comment. Public comment was invited for a period of 30 days for the draft EA after publication of the Notice of Availability in the *Tooele Transcript, Deseret News, and Salt Lake City Tribune*. Comments or requests for information could be submitted to Mr. Michael Shane, 388th Range Squadron/RSO, Environmental Protection Specialist, 6066 Cedar Lane, Bldg. 1274, Hill AFB, Utah 84056-5812 or Michael.Shane@hill.af.mil within 30 days of the publication of the Notice of Availability. A copy of the draft EA was available for public review at the DPG library, Tooele City Library, and the Salt Lake City Public Library. No comments on the draft EA were received.

Date: _____

_____	_____
Scott C. Long	**Sarah E. Zabel**
Colonel, U.S. Air Force	**Colonel U.S. Air Force**
388th Fighter Wing Commander	**75th Airbase Wing Commander**

Cover Sheet

ENVIRONMENTAL ASSESSMENT FOR THE CONTINUED EXCLUSIVE USE OF DEPARTMENT OF THE ARMY LAND LOCATED AT U.S. ARMY DUGWAY PROVING GROUND BY MEMBERS OF THE U.S. AIR FORCE

LEAD AGENCY: U.S. Air Force

TITLE OF PROPOSED ACTION: Environmental Assessment for the Continued Exclusive Use of Department of the Army Land Located at U.S. Army Dugway Proving Ground by Members of the U.S. Air Force

AFFECTED JURISDICTIONS: Dugway Proving Ground, Utah

PREPARED BY: U.S. Army Corps of Engineers, Sacramento District, Commanding

TECHNICAL ASSISTANCE FROM: AGEISS Inc.

APPROVED BY: Colonel Sarah E. Zabel, U.S. Air Force, 75th Airbase Wing Command

ABSTRACT: The U.S. Army Corps of Engineers has prepared environmental documentation for the proposed continued exclusive use of Department of the Army land located at U.S. Army Dugway Proving Ground by members of the U.S. Air Force. This environmental assessment (EA) addresses the potential environmental, socioeconomic, and cultural impacts of this proposal and its alternatives.

Based on the environmental impact analyses described in this EA it has been determined that implementation of the Proposed Action would not have a significant impact on the quality of the natural or the human environment. Because no significant environmental impact would result from implementation of the Proposed Action, an environmental impact statement is not required and a Finding of No Significant Impact (FONSI) will be published in accordance with the *National Environmental Policy Act*.

REVIEW PERIOD: A Notice of Availability (NOA) was published in the *Tooele Transcript* on June 7, 2012 and in the *Deseret News and Salt Lake City Tribune* on June 8, 2012, which announced the beginning of the 30-day public review period. In the NOA, interested parties were invited to review and comment on the EA and Draft FONSI, and were informed that the EA and Draft FONSI were available at the DPG library, Tooele City Library, and the Salt Lake City Public Library. Reviewers were invited to submit comments on the EA and Draft FONSI during the 30-day public comment period via mail or email to the following:

Mr. Michael Shane
388th Range Squadron/RSO, Environmental Protection Specialist
6066 Cedar Lane, Bldg. 1274
Hill AFB, Utah 84056-5812
801-586-2552
email Michael.Shane@hill.af.mil

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ENVIRONMENTAL ASSESSMENT
FOR THE
CONTINUED EXCLUSIVE USE OF DEPARTMENT OF THE ARMY LAND
LOCATED AT U.S. ARMY DUGWAY PROVING GROUND
BY MEMBERS OF THE U.S. AIR FORCE

Reviewed by:

Michael Shane
Environmental Protection Specialist
388th Range Squadron/RSO

Recommended by:

Scott C. Long
Colonel, U.S. Air Force
388th Fighter Wing Commander

Approved by:

75th Airbase Wing

Sarah E. Zabel
Colonel U.S. Air Force
75th Airbase Wing Commander

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EXECUTIVE SUMMARY

ES.1 Introduction

This environmental assessment (EA) analyzes the environmental impacts of the proposed continued exclusive use of Department of the Army (Army) land located at U.S. Army Dugway Proving Ground (DPG), Utah by members of the U.S. Air Force (USAF). This EA was developed in accordance with the *National Environmental Policy Act* (NEPA) (42 United States Code § 4321 et seq.); implementing regulations issued by the President's Council on Environmental Quality (CEQ), 40 *Code of Federal Regulations* (CFR) Parts 1500-1508; and the USAF NEPA implementing regulations (32 CFR Part 989, et seq.), *Air Force Environmental Impact Analysis Process.* Its purpose is to inform decision makers and the public of the likely environmental consequences of the Proposed Action and alternatives.

ES.2 Setting

DPG is located in west central Utah in Tooele County, about 80 miles southwest of Salt Lake City. The U.S. Department of Defense (DoD) has designated the 798,214-acre installation as a major range and testing facility, and the primary chemical and biological defense testing center under the Reliance Program. The DoD uses the airspace over Army and USAF lands (north of DPG) as well as adjacent public lands as a Maneuver Overflight Area. This area is known as the Utah Test and Training Range (UTTR) and encompasses over 15,000 square miles. The USAF 388th Fighter Wing (FW), 388th Range Squadron (RANS) Air Combat Command (ACC) operates a detachment on DPG in support of the UTTR. As a DPG tenant, the 388th FW is responsible for providing ground support for testing and training activities conducted on the UTTR for all DoD units and some North Atlantic Treaty Organization (NATO) countries.

ES.3 Proposed Action

The Proposed Action is the renewal of the USAF 388th FW existing lease for continued exclusive use of Army land located at DPG, Utah. In addition to the lease renewal, the 388th RANS is proposing to continue its current operations and activities associated with each property under the lease.

ES.4 Alternatives

Two alternatives were analyzed in this EA: the Proposed Action Alternative and the No Action Alternative.

Proposed Action Alternative. For the Proposed Action Alternative, the USAF would renew its current lease with the Army for exclusive use of facilities and infrastructure on DPG. In addition the USAF is proposing to continue current operations and activities associated with each property under the lease.

No Action Alternative. Under the No Action Alternative, the USAF would not renew its lease with DPG. This alternative would prevent the training of aircrew and testing of weapons systems in a simulated real-world scenario and would severely diminish the combat capabilities of the DoD. Although the No Action Alternative does not meet the

USAF's purpose and need, the No Action Alternative serves as a baseline against which the impacts of the Proposed Action Alternative can be evaluated and consequently it is carried forward for further evaluation in this EA.

Alternatives Considered and Eliminated from Further Analysis. The 388th RANS considered selecting an alternate location for conducting its operations. However, this alternative was determined to be cost prohibitive due to the need to establish the infrastructure that has already been put in place at DPG. In addition, no other large areas of uninhabited land with minimal proximity to private lands for USAF testing and training are available. This alternative was therefore, not carried forward for further analysis in the EA.

ES.5 Environmental Consequences

Consistent with NEPA implementing regulations and guidance, the USAF focuses the analysis in an EA on topics with the greatest potential for environmental impacts. This sliding-scale approach is consistent with NEPA [40 CFR 1502.2(b)], under which impacts, issues, and related regulatory requirements are investigated and addressed with a degree of effort commensurate with their importance. The USAF concluded that the proposed project would result in no impacts or negligible impacts to the following resource areas: air space management and safety, recreation and visual resources, solid waste, infrastructure, and land use and transportation. Nine resource areas, including noise, hazardous materials and waste, earth resources, water resources, air quality, biological resources, cultural resources, socioeconomics, and environmental justice were analyzed in detail in this EA.

Implementation of the Proposed Action Alternative or No Action Alternative would result in less-than-significant impacts on the human and natural environment at DPG. These environmental impacts are summarized in Table ES-1.

Under the No Action Alternative, the USAF would not renew its lease at DPG and the 388th RANS activities would not occur at DPG. Small beneficial impacts to several resources would be realized with the reduction in testing and training on DPG (Table ES-1).

Cumulative Impacts. Cumulative effects are those environmental impacts that result from the incremental effects of other past, present, or reasonably foreseeable future actions when combined with the Proposed Action. The analysis identified two reasonably foreseeable actions, the Joint Land Attack Cruise Missile Defense Elevated Netter Sensor System (JLENS) and Wig Launch Modification. The Proposed Action, when combined with other potential projects within the area, may have minor, short-term cumulative effects on air quality, and earth and biological resources as discussed below.

Table ES-1. Environmental Impacts of Implementing the Proposed Action Alternative or No Action Alternative

Resource Area	Impacts of the Proposed Action Alternative	Impacts of the No Action Alternative
Noise	Noise generation from implementation of the Proposed Action would be intermittent. For all the testing and training activities conducted west of the Avery Area, receptors for noise are limited to personnel conducting the tests and wildlife. Due to DPG's isolation, noise impacts from the Proposed Action to surrounding communities are negligible.	Under the No Action Alternative, the Proposed Action would not be implemented. There would be a slight decrease in testing and training; and consequently, a slight decrease in the ambient noise levels from existing conditions.
Hazardous Materials and Waste	No significant impacts from hazardous materials and waste are expected from implementation of the Proposed Action. The fuel oil tank at the UTTR-Q barracks is in the process of being removed from the facility by the 388th RANS, and would thus reduce hazardous waste storage at the site.	Under the No Action Alternative, the USAF would not renew its lease with DPG. The use and storage of hazardous materials and waste by the 388th RANS would be eliminated.
Earth Resources	Soil compaction is an adverse impact expected to occur as a result of ground disturbance caused by various activities required under the Proposed Action. Because most of the soils at DPG are well-drained and moderately permeable, water erosion hazard is generally slight to moderate. Soil erosion is a long-term, adverse impact that is expected to continue with implementation of the Proposed Action Alternative. These impacts are, however, limited to the playa impact areas, and a small acreage of land that is not specifically used for training, such as the Wig Target and Tank Maintenance areas. Impacts to soil erosion can be minimized in the non-target areas by using similar ingress and egress access in already impacted areas. Impacts to the playa impact areas from testing and training are not expected to increase under the Proposed Action Alternative.	Under the No Action Alternative, the USAF would not renew its lease with DPG. Soil erosion and compaction would not occur from target staging and testing, as well as tank maintenance.
Water Resources	Under the Proposed Action, large-scale changes to the natural surface water flows are not expected as impermeable surfaces are not expected to be altered or increased with the lease renewal. Activities associated with the 388th RANS testing and training would cause ground disturbance resulting in the potential for soil erosion and compaction which could increase localized surface water runoff. However, due to the high evaporation rate at DPG, these impacts are expected to be nonsignificant in the low-lying basin areas where the topography is relatively flat and the majority of the 388th activities occur.	Under the No Action Alternative, the USAF would not renew its lease with DPG and activities at the leased properties would cease. Additional adverse impacts from localized water runoff and potential spills from the 388th activities would be eliminated.
Air Quality	As a result of the Proposed Action Alternative, no changes would occur from existing conditions and no additional impacts would occur toward meeting the NAAQS. The Proposed Action would not change existing greenhouse gas emissions and would not exceed an additional 25,000 metric tons of carbon dioxide equivalent.	Under the No Action Alternative, the USAF would not renew its lease with DPG. Emissions from vehicle use, generators, and other sources would be eliminated. No additional greenhouse gas emission sources would be created.

Resource Area	Impacts of the Proposed Action Alternative	Impacts of the No Action Alternative
Biological Resources	Under the Proposed Acton, minimal intermittent impacts from vehicular movement, including tanks, to and from the 388th property areas would result in occasional interference of wildlife movement. No additional impact to vegetation from the Proposed Action is expected as the lease facilities occur in already impacted or low-vegetated areas. Threatened and endangered species are not known to inhabit the Proposed Action sites. No wetlands would be impacted with implementation of the Proposed Action Alternative since none are located within the Proposed Action area.	Under the No Action Alternative, vehicular traffic to the Wig Mountain and Cedar Mountain areas would decrease reducing the impacts to ungulate population movement. Fewer testing and training activities in the Wig Launch Area would decrease the potential for flushing golden eagles from their nests.
Cultural Resources	Potential impacts to cultural resources from the Proposed Action would not be significant. The Proposed Action would not affect any known National Register of Historic Places-eligible archaeological or historical sites, and no such sites occur in the properties considered for lease.	There would be no impact to cultural resources as a result of the No Action Alternative.
Socioeconomics	Under the Proposed Action Alternative, changes to the existing socioeconomic baseline conditions in the ROI would be negligible. The approximately 100 existing full-time DoD and civilian personnel would remain at DPG and no new personnel are anticipated. Beneficial impacts of implementing the Proposed Action include benefit to the community through greater employment opportunities, income, and housing occupation.	Under the No Action Alternative, changes to the existing socioeconomic baseline conditions would occur. Training of air crew and weapons systems would cease without renewal of the current lease, resulting in personnel relocation away from DPG or loss of local jobs. Some minor, negative impact to housing, income, and unemployment could occur as the workforce is diminished and relocated.
Environmental Justice	Potential impacts from lease renewal to low-income and/or minority populations and children would not be significant. Changes to the existing baseline conditions in the ROI would be negligible as a result of the Proposed Action.	Under the No Action Alternative, there would be no changes to low-income and/or minority populations, or disproportionate effects on children.

The JLENS project and construction of the new Wig launch pad would increase particulate matter, vehicle emissions, and wind-borne dust resulting in direct short-term impacts to air quality. These emissions would not result in significant cumulative impacts to air quality because the projects are temporary and no significant impacts to air quality would occur from the Proposed Action Alternative.

Minor cumulative impacts to soils would occur from the construction of the new Wig launch pad as land is converted to impervious surfaces (2,300 square feet). Additional soil disturbance from the impact of the recovered drones under the JLENS program would occur but would be localized. Onsite soil erosion would occur; however, implementation of standard best management practices (BMPs) would minimize erosion and potential cumulative impacts to soil.

The launches and flights under the JLENS program would be minimal (approximately 6 to 20 over a period less than a month) and occur in areas that are currently flown over by other aircraft. The relative infrequent activity within the flight path may have short-term cumulative biological impacts on avian species, especially golden eagles, if other testing in the Wig area under the Proposed Action Alternative is conducted at the same time. Impacts would be negligible if projects are temporally separated and if activities are limited during the nesting season, January through July.

ES.6 Mitigation Responsibility

No mitigation measures are required for the Proposed Action Alternative because resulting impacts do not meet significance criteria; that is, the impacts would not be significant.

ES.7 Findings and Conclusions

Direct, indirect, and cumulative impacts of the Proposed Action Alternative and the No Action Alternative have been considered. No significant impacts would occur. Therefore, the issuance of a Finding of No Significant Impact is warranted, and preparation of an environmental impact statement is not required.

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The U.S. Air Force (USAF) 388th Fighter Wing (FW) from Hill Air Force Base (AFB) is proposing to renew its existing lease for continued exclusive use of Department of the Army land located at U.S. Army Dugway Proving Ground (DPG), Utah. In addition to the lease renewal, the 388th Range Squadron (RANS) is proposing to continue its current operations and activities associated with each property under the lease.

The *National Environmental Policy Act* (42 U.S.C. 4321 *et seq*.; NEPA), the Council on Environmental Quality's (CEQ's) NEPA regulations [40 *Code of Federal Regulations* (CFR) Parts 1500 to 1508], and the USAF NEPA implementing regulations (32 CFR Part 989, et seq.), *Air Force Environmental Impact Analysis Process*, require that the USAF consider the potential environmental impacts of a Proposed Action before making a decision to implement it.

In compliance with these regulations, this environmental assessment (EA):

- Examines the potential environmental impacts of the Proposed Action and the No Action Alternative;
- Identifies unavoidable adverse environmental impacts of the Proposed Action;
- Evaluates the potential individual and cumulative, direct and indirect impacts of the Proposed Action;
- Describes the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and
- Characterizes any irreversible and irretrievable commitments of resources that would be involved should the USAF decide to implement its Proposed Action.

The USAF must meet these requirements before it can make a final decision to proceed with any proposed Federal action that could cause significant impacts to human health or the environment. This EA provides the USAF and other decision-makers the information needed to make an informed decision about the lease renewal and continued operation under the Proposed Action. For purposes of comparison, this EA also evaluates the impacts that could occur, if the USAF did not renew its lease with DPG (the No Action Alternative). The EA does not analyze other action alternatives; however, one other alternative was considered but eliminated from further analyses.

1.2 Background

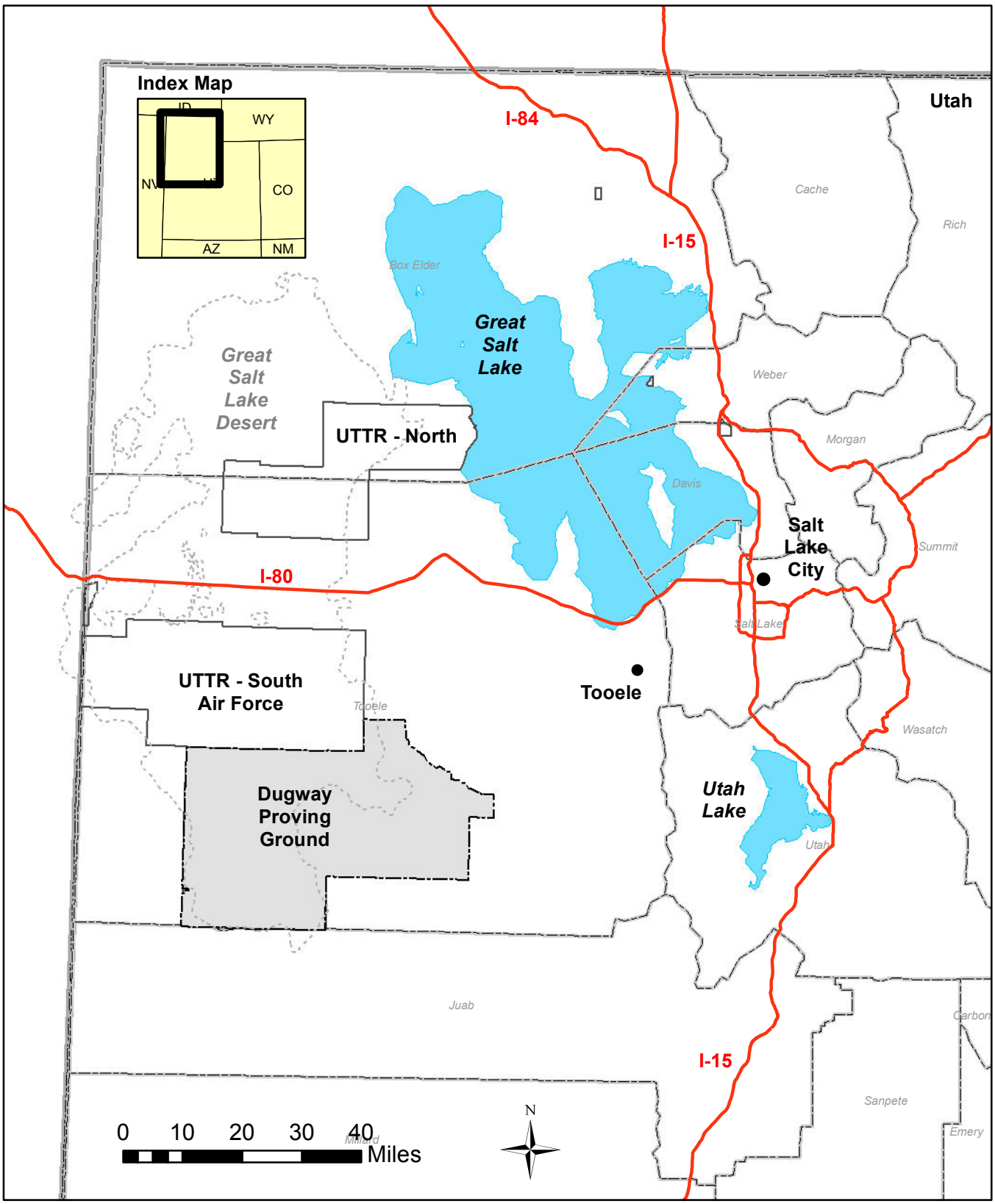
Shortly after the United States entered World War II, the War Department sought to establish a military installation to research and test chemical and biological weapons (Panamerican Consultants 2009). Construction of DPG began in 1942 in the remote desert areas south of the Great Salt Lake and west of Tooele, Utah. After the close of the war, the mission at DPG was reduced and the area was only used for safari testing. In response to the Cold War threat, DPG was reactivated and the mission expanded in 1950. A complete historical account of DPG can be found in the DPG *Integrated Cultural Resources Management Plan* (DPG 2001).

DPG is located in west central Utah in Tooele County, about 80 miles southwest of Salt Lake City (Figure 1-1). The U.S. Department of Defense (DoD) has designated the 798,214-acre installation as a major range and testing facility, and the primary chemical and biological defense testing center under the Reliance Program (DPG 2001). The DoD uses the airspace over Army and USAF lands (north of DPG) as well as adjacent public lands as a Maneuver Overflight Area. This area is known as the Utah Test and Training Range (UTTR) and encompasses over 15,000 square miles (Gene Stout and Associates 2007).

The AF 388th FW, 388th RANS Air Combat Command (ACC) operates a detachment on DPG in support of the UTTR. As a DPG tenant, the 388th RANS is responsible for providing ground support for testing and training activities conducted on the UTTR for all DoD units and some North Atlantic Treaty Organization (NATO) countries. These ground support activities include tracking and evaluating aircraft training and test missions; response to in-flight emergencies and support of grounded flight crews; and support of crews in testing and recovering aircraft, missile, and space vehicle elements (DPG 2003). In addition to their primary USAF support responsibilities, the 388th RANS provides support to non-Air Force activities that require electronic flight surveillance capabilities. The 388th RANS operations at DPG include the use of office facilities at Avery Area, maintenance facilities, storage facilities, lodging facilities, command and control centers for weapons testing, radar sites, target and telemetry locations, and roads to target complexes and radar sites. In total the 388th RANS occupies approximately 6,680 acres on DPG land. The 388th RANS has occupied facilities on DPG land since 1978 and with current global situations sees an ongoing need for continued use of this land in the future.

1.3 Purpose and Need

The purpose of the Proposed Action is to renew the USAF's existing lease for continued exclusive use of Department of the Army land located at DPG for continued operations in support of the 388th RANS mission at the UTTR. The need for the Proposed Action is to meet current and future mission requirements and objectives associated with the 388th FW. This involves meeting ongoing mission requirements that necessitate repairing and upgrading the 388th RANS facilities; continuing current operational activities at the leased properties; improving the efficiency and effectiveness of testing and training activities with the ability to expand; and improving roadways used for testing and training access. The 2003 *Environmental Impact Statement (EIS) for Activities Associated with Future Programs at U.S. Army Dugway Proving Ground* (2003 DPG EIS) documented and described activities conducted by the 388th RANS. However, since publication of the EIS, the 388th RANS has added activities and properties; therefore, this EA includes operational activities at the leased properties not covered in the 2003 DPG EIS for environmental consideration.



UTTR - Utah Test and Training Range

Legend

- Interstate highway
- Dugway Proving Ground Installation boundary
- County boundary
- State of Utah boundary

Figure 1-1. Location Map of Dugway Proving Ground, Utah

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2.0 DESCRIPTION OF PROPOSED ACTIONS AND ALTERNATIVES

This section presents information on the USAF's Proposed Action for lease renewal on DPG property and continued operations associated with each leased property. Section 2.1 identifies alternatives to the Proposed Action, including the No Action Alternative. Section 2.2 describes the Proposed Action in detail. Section 2.3 discusses alternatives identified but not carried forward. Environmental Impact Analysis Process (EIAP) and regulatory permits and requirements are discussed in Sections 2.4 and 2.5 respectively.

2.1 Description of Proposed Actions and Alternatives

Proposed Action Alternative. For the Proposed Action Alternative, the USAF proposes to renew its current lease with the Army for exclusive use of facilities and infrastructure on DPG. In addition, the USAF is proposing to continue current operations and activities associated with each property under the lease.

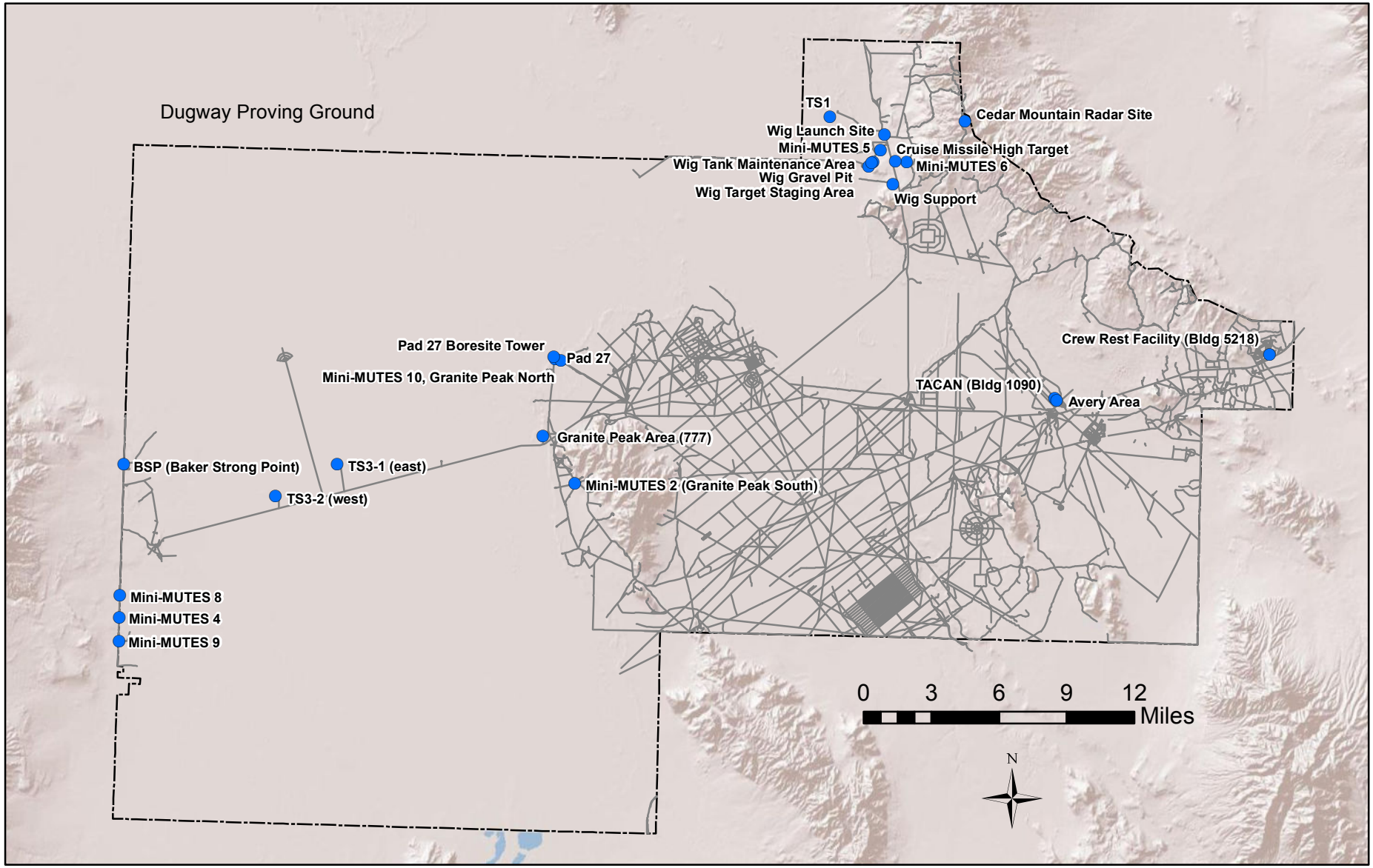
No Action Alternative. CEQ regulations require consideration of the No Action Alternative for all proposed actions. Under the No Action Alternative, the USAF would not renew its lease with DPG. This alternative would prevent the training of aircrew and testing of weapons systems in a simulated real-world scenario and would severely diminish the combat capabilities of the DoD. Although the No Action Alternative does not meet the 388th FW's purpose and need, the No Action Alternative serves as a baseline against which the impacts of the Proposed Action and alternatives can be evaluated and consequently it is carried forward for further evaluation in this EA.

2.2 Proposed Actions

The USAF is proposing to renew a current lease with the Army for exclusive use of facilities and infrastructure on DPG. In addition, it is proposing to continue current operations and activities associated with each property under the lease. This renewal would allow the USAF to continue to use the facilities to provide support for testing and training activities conducted on the UTTR (Figure 2-1). Range facilities would continue to be jointly used by the USAF and Army, and future uses would require coordination through standard procedures currently in place.

The USAF currently uses approximately 6,680 acres of land for command and control activities associated with testing and training. The land and activities can be divided into the following eight locations within DPG:

- English Village - UTTR-Q barracks
- Avery Area
- Cedar Mountain
- Wig Mountain Area
- Granite Peak
- PAD 27 Area
- Baker Strong Point
- Goodyear Road and TS-3 Area



DPG Dugway Proving Ground
MUTES Multiple Threat Emitter System
USAF United States Air Force
UT Utah

Figure 2-1. Locations of Properties Considered in the USAF Lease Renewal on DPG, UT.

English Village - UTTR-Q barracks. English Village, also known historically as the Easy Area, currently and historically contains the administrative functions of the post as well as housing. The UTTR-Q barrack, located on the east side of English Village just north of Doolittle Street and approximately 1.25 miles from the main gate, houses 388th RANS personnel and their customers (Figure 2-2). The barracks were constructed in 1952 and were acquired by the USAF for housing in 1998 to support training needs (DPG 2003). Maintaining on-installation housing for the USAF activities is described and analyzed in the 2003 DPG EIS and will not be discussed further in this EA.

Avery Area. The Avery Area covers approximately 40 acres and is located west of English Village and is the focus of the 388th RANS operations (Figure 2-3). The area was originally called the Able Area but was later renamed the Avery Technical Center in honor of BG Ray L. Avery, Commanding General of the Edgewood Arsenal (Panamerican Consultants 2009). The buildings in the Avery Area, which date from the reinstatement of DPG in the early 1950s, were designed for radiological studies and the handling of radioactive materials (Panamerican Consultants 2009). The radiological warfare laboratories were primarily used during this period to study dosimetry (measuring doses of X-ray) and irradiation of food (DPG 2001). The project used spent fuel elements from the Atomic Energy Commission to irradiate fresh, cooked, canned and prepared foods with gamma rays in an effort to kill micro-organisms, trichina in pork, and food-infesting insects (DPG 2001).

The Avery Area was organized around an internal rail system for transportation of radioactive material; portions of the rails are still visible today. The main building, Building 1010, encompassed a radioactive "hot cell" which was 10 x 20 x 35 feet (DPG 2001). Supporting facilities included a liquid radioactive disposal system, personnel decontamination facility, contaminated air filtration system, photograph dark room, sample counting rooms, laboratory, heating plant, and an emergency power station (Panamerican Consultants 2009). Detailed information on the historical radiologic testing at many of the Avery Area buildings can be found in the *National Register of Historic Places Evaluations for the Ditto and Avery Areas of U.S. Army Dugway Proving Ground* (Panamerican Consultants 2009).

Today, Avery is the administrative area, which provides support to air testing/training for the 388th RANS. Approximately 100 DoD and contract personnel support the 388th RANS on DPG. Activities involved in support to air testing as documented in the 2003 DPG EIS include environmental support services, equipment maintenance, fire fighting and emergency response, security, and utilities (Table 2-1). These activities still occur in the Avery Area and are not analyzed further in this EA.

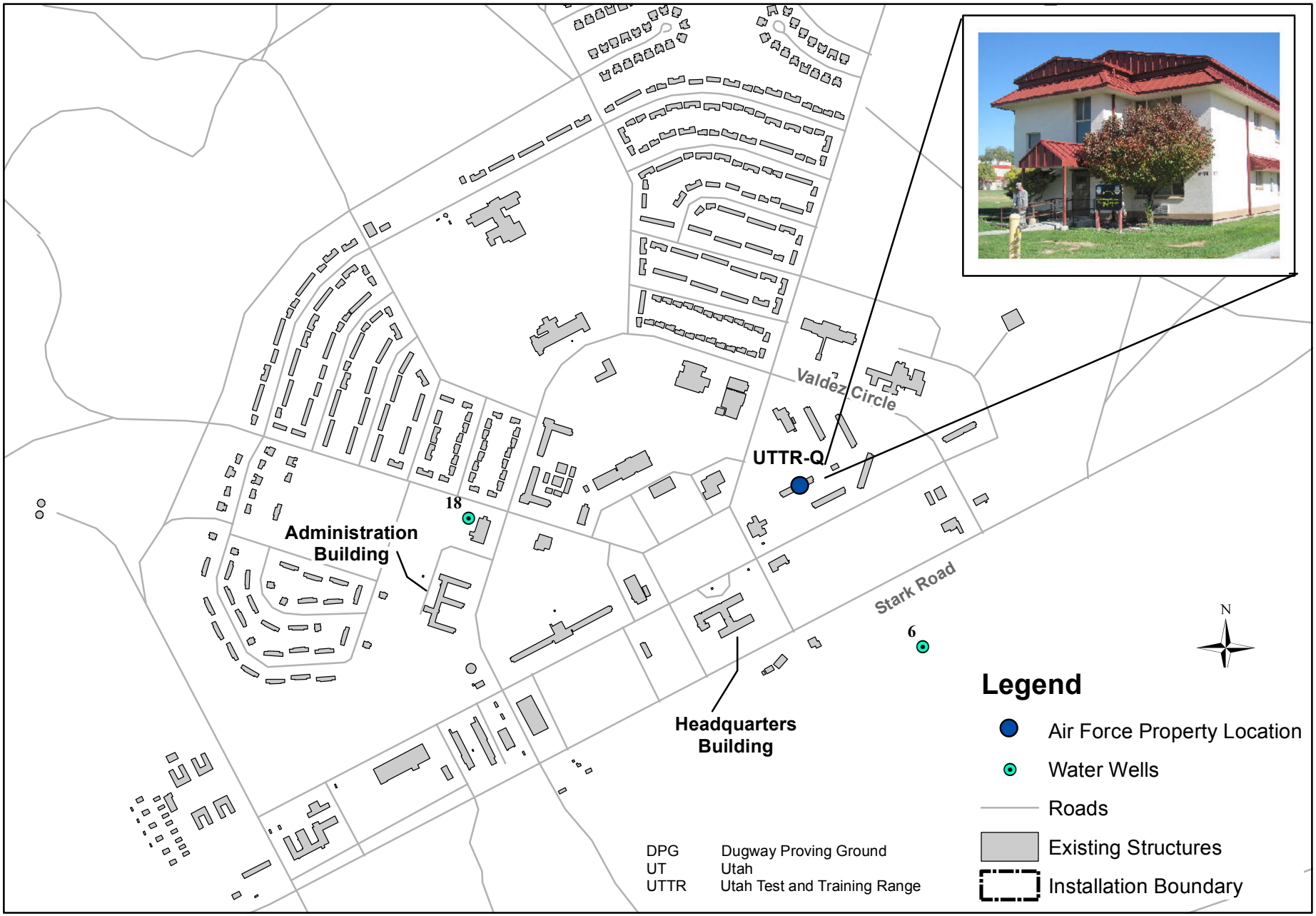


Figure 2-2. Location of the UTTR-Q Barracks in English Village, DPG, UT.

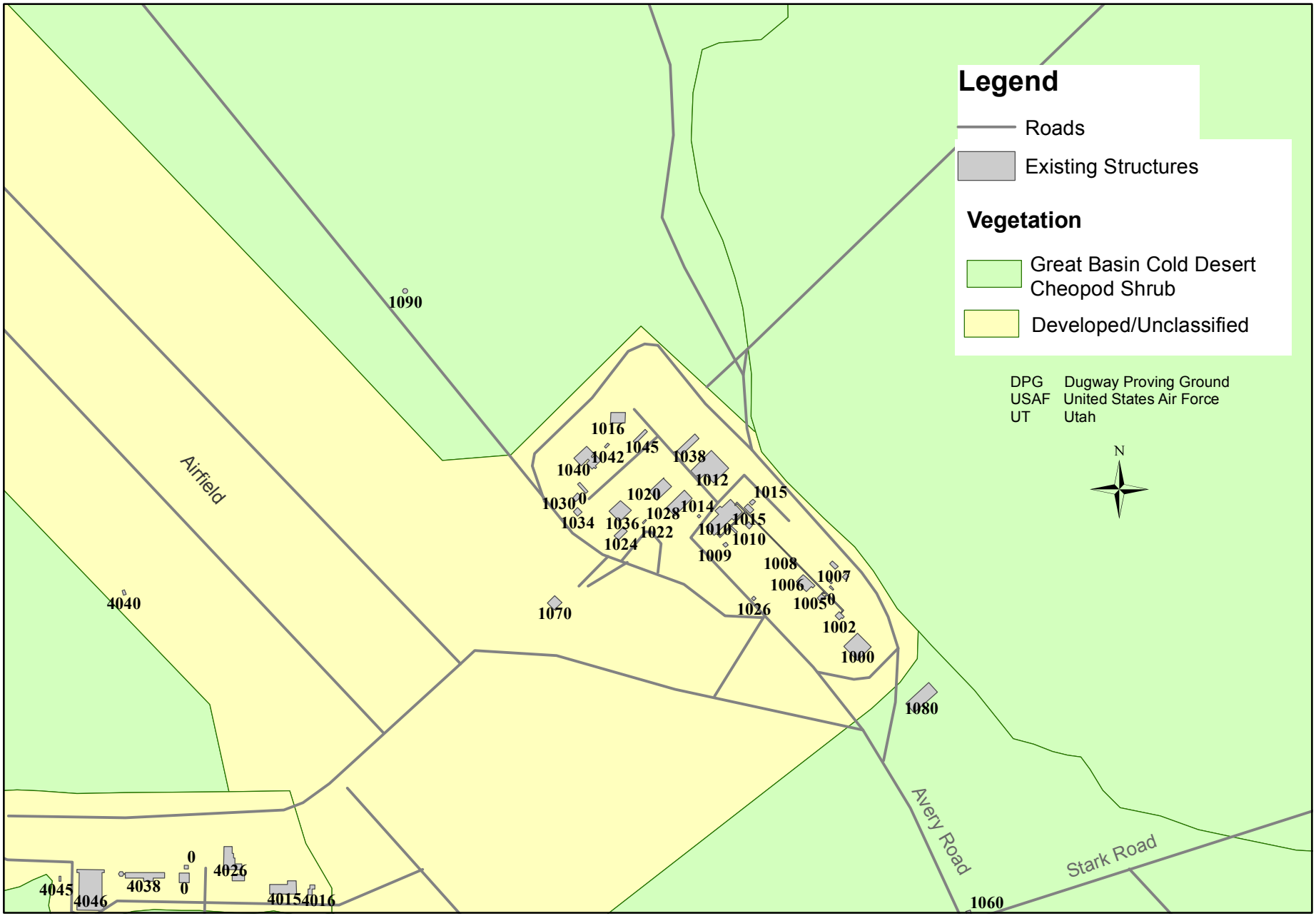


Figure 2-3. Location of Buildings used by the USAF within the Avery Area, DPG, UT.

Table 2-1. Buildings Located in the Avery Area, Date Constructed, and Current Usage by the 388th RANS

Building Number and Facility Name	Current Function	Date Constructed
1001 Universal Waste Storage	Battery waste storage	1988
1002 Avery Tunnel Entrance	Not used by the 388th	1952
1003 Foundation for Old Wash Pad	Not in use	1953
1004 Old Air Filter Bldg	Not used by the 388th	1952
1006 Generator Maintenance Shop	Generator maintenance	1952
1007 Organizational Storage	Range construction materials	1953
1009 Avery Picnic Pavilion	Outdoor picnic area	2003
1010 Test Operations	Operation headquarters for the 388th	1952
1011 Communications Maintenance Shop	Communications maintenance	1990
1012 Photo Operations & Maintenance	Maintenance of video-optical equipment and storage of photo equipment	1980
1014 General Purpose Storage	Storage of yard maintenance tools	1952
1015 MUTES/TRAINS Storage	Storage	1988
1016 Classified Storage	Classified storage; no longer authorized for storage of munitions	1952
1020 Target Maintenance	Target maintenance	1952
1022 Organizational Storage	Open storage area for pipes, rebar, metal rods	1988
1024 Classified Storage	ATV and other storage	1991
1028 Photo Operations	Old photo operation offices - scheduled for demolition	1992
1030 Vehicle Maintenance Shop	Tire storage	1952
1034 General Storage	Tire storage	1952
1036 Threat Maintenance	Maintenance facility for radar threat emitters, cinetheodalites, communication and telemetry, smoky sams and special project equipment	1992
1038 General Storage	General storage	1992
1040 Vehicle Maintenance Shop	Utilized for USAF vehicle maintenance including battery recharge/replacement, flushing radiators and oil change	1982
1042 90-Day Holding Facility	90-day hazardous waste holding facility	1988
1045 Loading Dock	Concrete loading dock	1988
1090 TACAN	Tactical air navigation equipment, houses transponder that directs incoming aircraft to appropriate landing site	1970

Cedar Mountain. The Cedar Mountain radar site (Figure 2-4), developed in 1981, is situated at the highest point on DPG in the Cedar Mountains. The site is jointly used by the Army and USAF to enhance the signals of mobile communication radios and to relay tracking information from the UTTR instrumentation to cinetheodolite stations for target acquisition via a microwave network operating in the range of 1.7 to 1.8 GHz (USAF 1990). The Cedar Mountain site is used approximately four days per week for approximately 52 weeks of the year. The site is not permanently manned, but 1 to 4 personnel occupy the main building during air training and testing. USAF activities associated with the Cedar Mountain site were not analyzed in the 2003 DPG EIS and are considered in this EA.

Wig Mountain Area. The Wig Mountain Area consists of several 388th RANS properties located on the northeast portion of DPG (Figure 2-5): Wig Support Facility, Wig Tank Maintenance Area, Wig Target Staging Area, Wig Gravel Pit, TS-1 and Access Road, Cruise Missile High Target, Wig Launch Site, Peak Road, TS-4 Access Road, and Mini-Multiple Threat Emitter System (MUTES) 5 and 6. This area supports Hill AFB military training of pilots, weapons testing, and the operations of the 388th FW mission.

The Wig Support Facility (five buildings on 7.27 acres) is used in support of weapons testing and air training as described in the 2003 DPG EIS. The area once supported the Ground Launched Cruise Missile Program, but is no longer used for this purpose by the USAF in accordance with the terms established in the Intermediate Nuclear Forces Treaty signed in 1988 (USAF 1990). Currently the facility supports testing of various weapons including the Air Launch Cruise Missile (ALCM), and provides weapons testing and threat support with telemetry, video, and laser detection. A new system has been installed in the main building which will have remote cinetheodolite control (camera system for tracking training and weapons use). This system can be employed to reduce potential hazards to the camera operators during close weapon training (operator would not have to be located inside the cinetheodolite). The Wig Support Facility has 10 to 14 personnel on site during training and test missions with operations requiring use 50 weeks out of the year. Target areas used within the Wig Mountain Area as well as the Wig Support Facility were discussed and analyzed in the 2003 DPG EIS and are not discussed further in this EA.

Table 2-2 outlines properties within the Wig Mountain Area that support 388th RANS training and testing.

Table 2-2. Properties Located in the Wig Mountain Area used by the 388th RANS

Property	Usage and Frequency of Usage	Number of Personnel at Site
Wig Tank Maintenance	Maintenance of tanks and storage of surplus tank parts. The 5.8-acre area contains a concrete 15-foot by 30-foot by 15-foot bunker for spare parts and a Sprung structure for maintenance. On average, 4 to 6 tanks are serviced per year.	4-6
Wig Gravel Pit	Joint USAF/Army gravel pit (24.2 acres) used for source of gravel for road maintenance. Fifteen thousand to 20,000 tons of gravel are used annually by the USAF depending on testing programs and weather conditions.	6-10
Wig Target Staging Area	A 2.99-acre repository for scrapped materials that are eventually used as targets on the ranges. All scrapped vehicles are drained of fluids prior to storage. Site is accessed for removal and addition of targets approximately 30 days per year.	not applicable
Wig Launch Site	Missile launch site (4.01 acres) used 8 to 10 times per year.	25-50 when in use
TS-1	Target area (305.78 acres) within the impact area with four video measuring assessment systems (VMAS)	not applicable
Cruise Missile High Target	This site is not used by the 388th as a target area due to its proximity to the Wig facilities.	not applicable
Mini-Multiple Threat Emitter System (Mini-MUTES) 5 and 6	Mini-MUTES are remotely controlled radars positioned in various locations throughout the Utah Test and Training Range. They are used during training and evaluation missions. Each mini-MUTES area consists of a circular gravel hardened pad with a power source.	not applicable

Within the Wig Mountain Area, the 388th RANS maintains several roads for continual access to its properties and training areas. Peak Road (13 miles) divides the salt playa flats of the DPG and the South-UTTR training areas. TS-1, TS-4, and the Mini-MUTES all have access roads that are maintained by the 388th RANS. All road upgrade and repairs for the USAF activities as well as the usage of the Wig Gravel Pit in support of air testing and training are covered in the 2003 DPG EIS and are not discussed further in this EA. Wig Tank Maintenance, Wig Launch Site, and the Wig Target Staging Area are discussed further in this EA.

Granite Peak. The Granite Peak area contains the Granite Peak Electronic Scoring Site (ESS) and the 777 microwave site (777), collectively called the North Granite Peak area (2.86 acres), and the Granite Peak South site (Mini-MUTES 2) (Figure 2-6). Granite Peak ESS emits electronic threat signals to train aircrews to penetrate enemy air defenses. The Granite Peak ESS consists of eight interconnecting 40-foot wood-sided trailers surrounded by a gravel parking lot. The site evaluates the effectiveness of the counter measures that are transmitted by the aircraft from the main Granite Peak site. The threat signals are emitted from the main and remote sites located throughout the UTTR and all activity is controlled from the main site. The 777 microwave site, which is adjacent to the Granite Peak ESS, functions as a microwave and telecommunications relay station. The 388th RANS has approximately 25 personnel working at the North Granite Peak Site who make daily trips from Avery to the site. The site is used daily throughout the year. The Granite Peak site was discussed and analyzed in the 2003 DPG EIS and is not further analyzed in this EA.

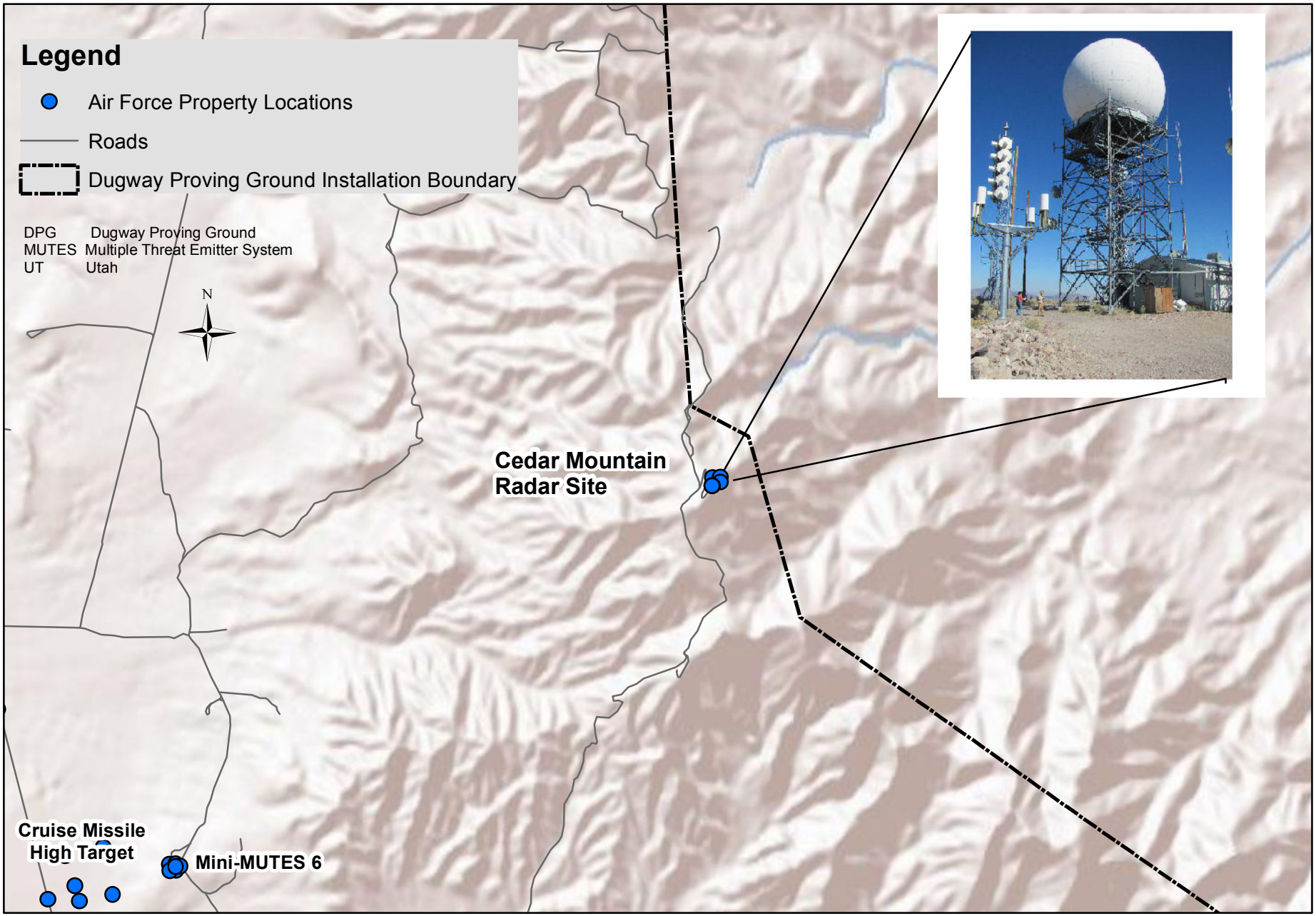


Figure 2-4. Cedar Mountain Radar Site, DPG, UT.

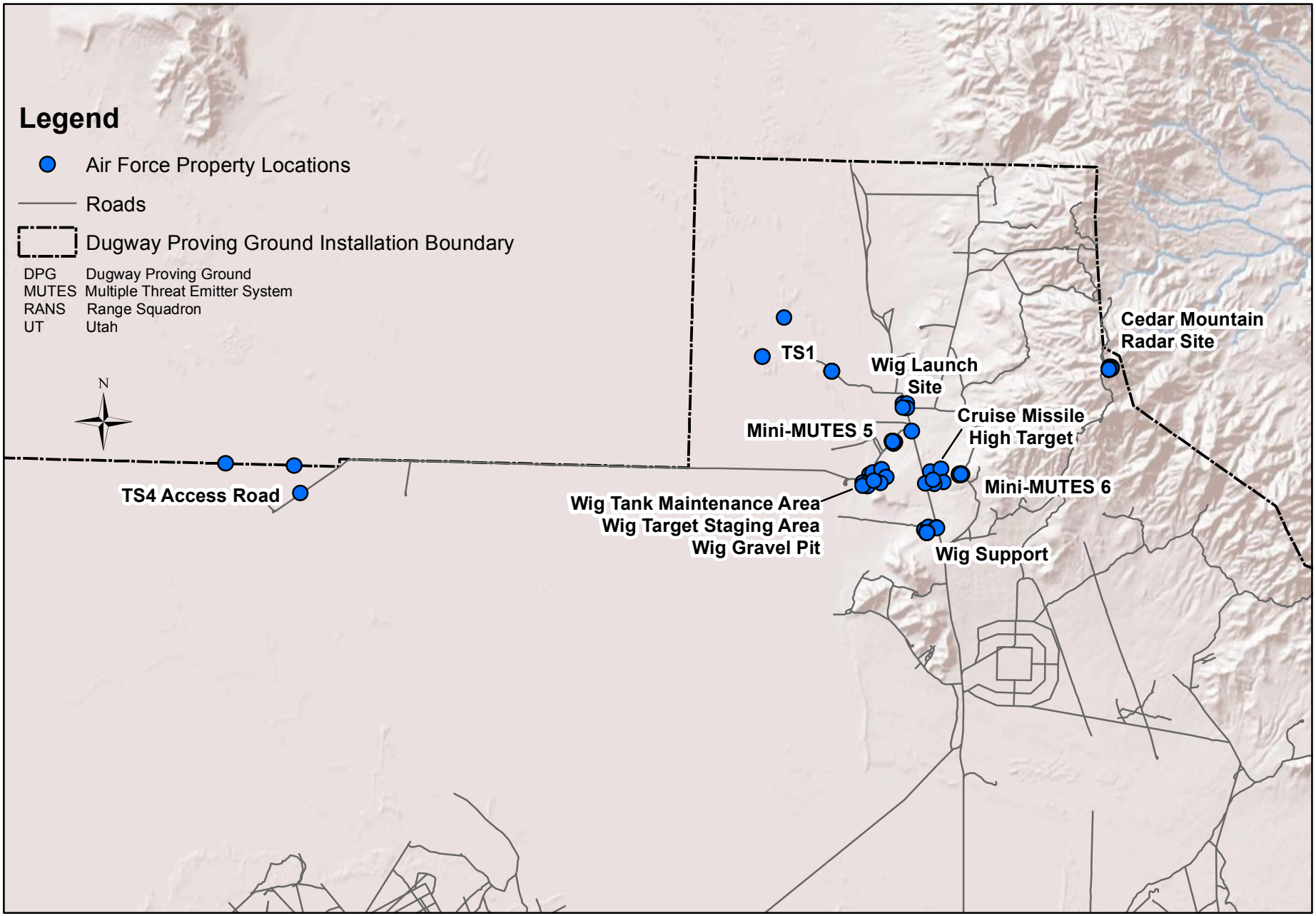


Figure 2-5. Property Locations for 388th RANS Operations in the Wig Mountain Area, DPG, UT.

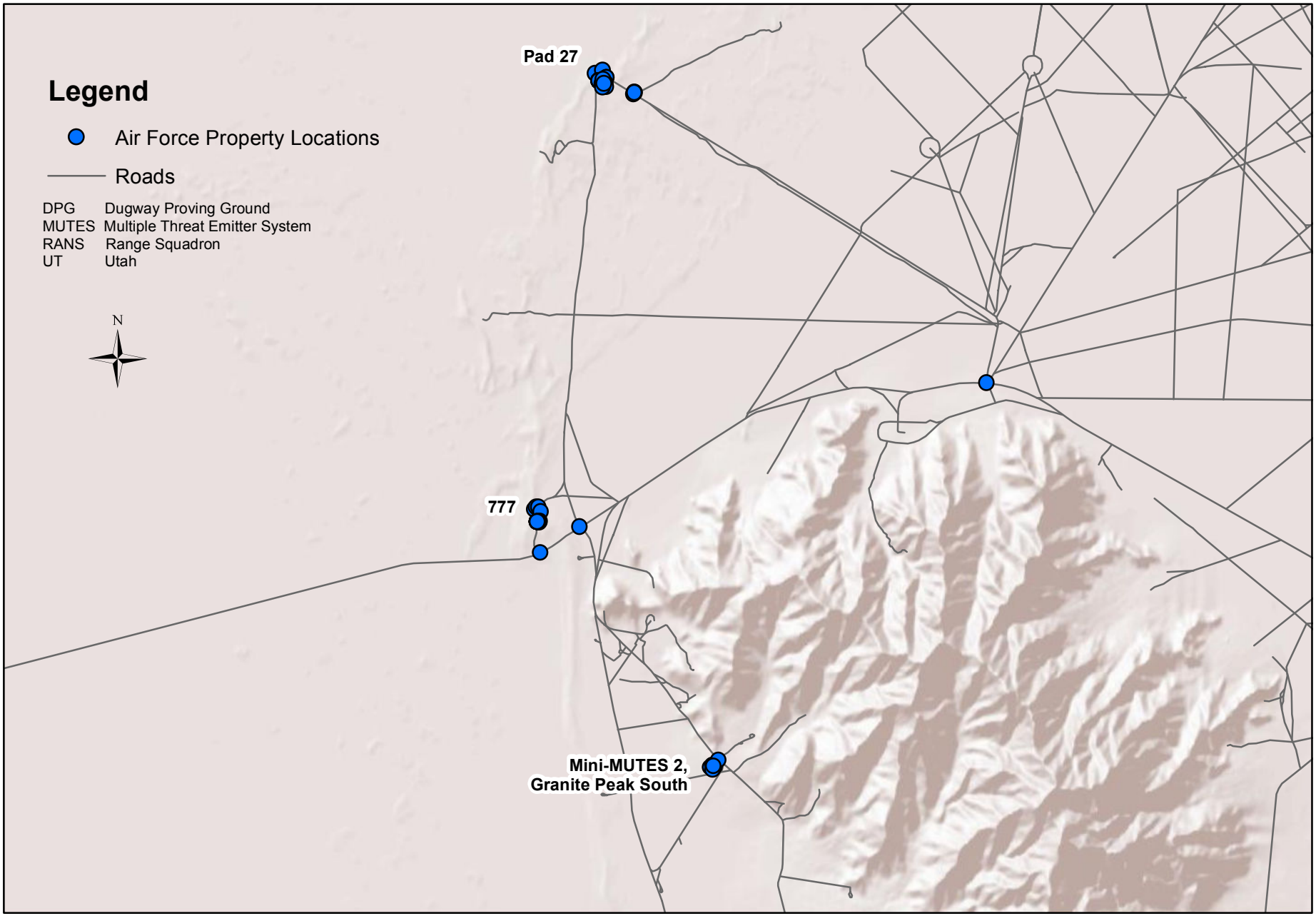


Figure 2-6. Property Locations for 388th RANS Operations in the Granite Peak Area, DPG, UT.

PAD 27 Area. The PAD 27 area consists of the PAD 27 site (3.04 acres), a boresite tower, Mini-MUTES 10, and the access road to the PAD 27 facilities (Figure 2-6). The PAD 27 road heads north from Stark Road, and covers 7.87 miles looping back south towards Stark Road. The boresite tower lies just off of the PAD 27 road, east of the PAD 27 site. The boresite is used for calibration of the radar system at PAD 27.

PAD 27 contains an AN/TPQ-39 C-band Digital Instrumentation Radar for tracking targets using skin returns or a beacon transponder (USAF 1990). It records raw ranges, elevation, and azimuth data for real-time or post-mission time space position information data calculations. The radar operates at a frequency between 5.4 and 5.9 GHz. A circular zone extending out to 314 feet from the radar antenna is marked as a radio frequency hazard zone (DPG 1990). The radar system is used to track threats within the DPG area including planes and missiles. Four personnel operate the PAD 27 site, and the system is in operation approximately 208 days of the year. Activities associated with PAD 27 were not covered in the 2003 DPG EIS and are analyzed in this EA.

Baker Strong Point. The Baker Strong Point (BSP) Tactical Target Complex comprises approximately 5,993 acres of unimproved land, and is located near the western boundary of DPG accessible by Goodyear Road (Figure 2-7). The BSP is a nonscorable air-to-ground target, designed to simulate a fortified desert position (AF 1990) and evaluate weapon systems. It is authorized for selected training/inert ordnance from nuclear and conventional deliveries, day or night. High angle strafing and high altitude bombing (above flight level 180) are authorized with heading restrictions. The complex consists of towers used for photo documentation of training missions and 11 Weapons Impact Scoring System (WISS) targets. Lasers are used to mark targets for training missions and are pointed inward towards the range and only used at select targets. If civilians are in the area, laser use is terminated until they are clear of the site. The ground surface at BSP is cleared as required, but at least annually, by USAF personnel. Unexploded ordnance found in the range are rendered safe at the BSP and then transported to the recycle yard (Owens 2011). Currently the BSP is used for training purposes with inert munitions only. In 2011, there were 3,991 sorties flown over BSP but not all of them dropped munitions. Mini-MUTES 4, 8, and 9 are also located along the western boundary and have similar usage as previously described for the other Mini-MUTES. The BSP and associated activities were discussed and analyzed in the 2003 DPG EIS and are not further analyzed in this EA.

Goodyear Road and TS-3 Area. Access to the western boundary sites is by Goodyear Road (Figure 2-7) which is an historical section of the Lincoln Highway. This 16.9-mile stretch of road is used by the 388th RANS for access from the Granite Peak North site to BSP. TS3-1 and TS3-2, located west of Granite Peak and north of Goodyear Road, are target arrays used for training exercises. Both of these areas were discussed and analyzed in the 2003 DPG EIS and are not analyzed in this EA.

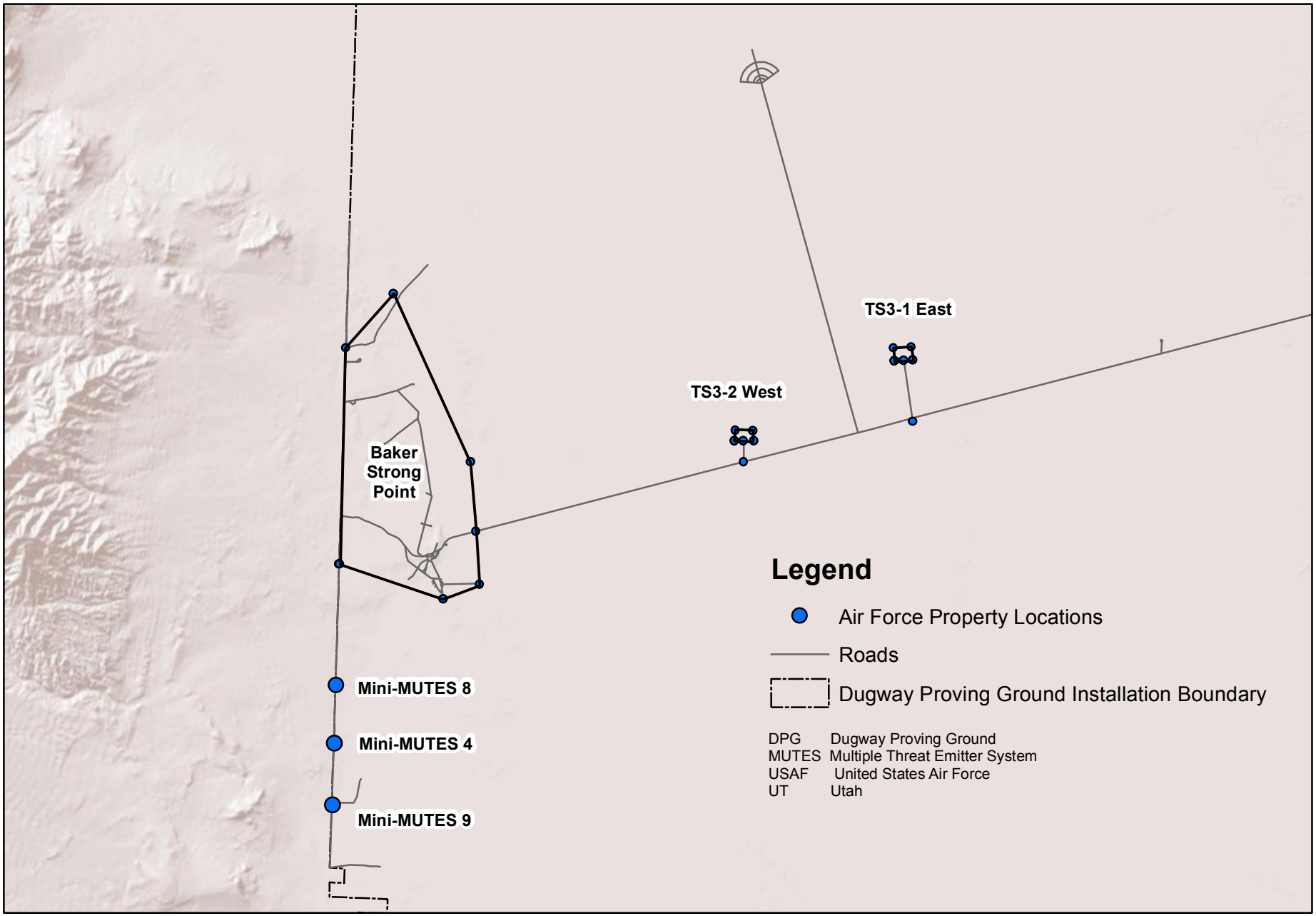


Figure 2-7. Property Locations for USAF Operations Located near the Western Border of DPG, UT.

2.3 Alternatives Considered but Not Carried Forward

The 388th RANS considered selecting an alternate location for conducting its operations. Selecting an alternate location was considered but eliminated for the following reasons:

- A large area of land and open air space with minimal encroachment are required for testing and training by the USAF. There is no other place available.
- If a location were available it would be cost prohibitive to relocate. New facilities and infrastructure would have to be constructed to support the testing and training by the USAF. The facilities and infrastructure already exist at DPG.

2.4 Environmental Impact Analysis Process

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, 20 July 1994, states "the Air Force will conduct its activities according to national environmental policy," and all personnel are accountable for the environmental consequences of their actions. The USAF, in its mission to achieve and maintain environmental quality, is committed to conserving natural and cultural resources through effective planning and integrating, into all levels of decision-making, the environmental consequences of proposed actions and alternatives. The *Environmental Impact Analysis Process* (EIAP; 32 CFR Part 989), as amended, is the USAF's program for implementing the provisions of NEPA.

2.5 Other Regulatory and Permit Requirements

To comply with NEPA, the planning and decision-making process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision-maker to have a comprehensive view of major environmental issues and requirements associated with a proposed action. The NEPA process is intended to assist decision makers in understanding the environmental consequences and in taking appropriate actions that protect, restore, and enhance the environment. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively." Other Federal statutes that may apply to the Proposed Action are summarized in Table 2-3.

Table 2-3. Summary of Applicable Permits and Regulations

Regulation	Source
Air Space	
Air Force Airspace Management	AFI 13-201
Cultural Resources	
National Historic Preservation Act of 1966	16 U.S.C. 470 et seq., as amended
Archaeological Resources Protection Act of 1979	16 U.S.C. 470a-11, as amended
American Indian Religious Freedom Act of 1978	P.L. 95-341 and 42 U.S.C. 1996, as amended
The Native American Graves Protection and Repatriation Act of 1990	P.L. 101-601 and 25 U.S.C. 3001–3013
Protection and Enhancement of the Cultural Environment	EO 11593
Indian Sacred Sites	EO 13007
Consultation and Coordination with Indian Tribal Governments	EO 13175
Preserve America	EO 13287
Cultural Resource Management	AFI 32-7605
Department of Defense, Protection of Archaeological Resources	32 CFR 229
Integrated Cultural Resource Management	AR 420-40
Biological Resources	
Endangered Species Act of 1973	16 U.S.C. 1531–1543
Migratory Bird Treaty Act of 1918	16 U.S.C. 703–712
Bald and Golden Eagle Protection Act	16 U.S.C. 668–668c
Sikes Act Improvement Act of 1977	16 U.S.C. 670a–670o, 74 Stat. 1052
Invasive Species (3 February 1999)	EO 13112
Protection and Enhancement of Environmental Quality	EO 11514
Conservation of Migratory Birds	EO 13186
Integrated Natural Resource Management	AFI 32-7064 and AR 200-3
Hazardous Materials and Waste Management	
Resource Conservation and Recovery Act of 1976	42 U.S.C. 6901, as amended
Comprehensive Environmental Response, Compensation, and Liability Act of 1980	42 U.S.C. 103
Pollution Prevention Act of 1990	42 U.S.C. 133
Toxic Substance Control Act of 1976	15 U.S.C. 53
Solid and Hazardous Waste Compliance	AFI 32-7042
Federal Compliance with Pollution Control Standards	EO 12088
Strengthening Federal Environmental, Energy, and Transportation	EO 13423
Air Quality	
Clean Air Act of 1970 and Amendments of 1977 and 1990, including the General Conformity Rule and the Greenhouse Gas Tailoring Rule	42 United States Code (U.S.C.) 7401 et seq., as amended
Federal Leadership in Environmental, Energy, and Economic Performance	EO 13514
Air Quality Compliance	AFI 32-7040
Noise	
Noise Control Act of 1972	42 U.S.C. 4901 et seq., Public Law (P.L.) 92-574
Air Installation Compatible Use Zone Program	AFI 32-7063

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3.0 AFFECTED ENVIRONMENT

All potentially relevant resource areas were initially considered for analysis in this EA. In compliance with NEPA and CEQ guidelines, the discussion of the affected environment in Section 3 and the environmental consequences in Section 4 focuses only on those resource areas considered potentially subject to impacts and with potentially significant environmental issues. This section is based on existing information documented in the 2003 DPG EIS (DPG 2003). No new major environmental data collection efforts were conducted on DPG lands specifically for this EA.

Consistent with NEPA implementing regulations and guidance, the USAF focuses the analysis in an EA on topics with the greatest potential for environmental impacts. This sliding-scale approach is consistent with NEPA [40 CFR 1502.2(b)], under which impacts, issues, and related regulatory requirements are investigated and addressed with a degree of effort commensurate with their importance. The USAF concluded that the proposed project would result in no impacts or negligible impacts to the resource areas listed in Table 3-1 and did not carry them forward for detailed description and analysis.

Table 3-1. Categories of Environmental Consequences Not Analyzed in Detail

Resource Area	Rationale
Land Use	The Proposed Action would not alter the current land use of the area and similar operations are already conducted at the site.
Air Space Management and Safety	Due to changes in deployment levels and mission changes the air testing and training sortie numbers presented in the 2003 DPG EIS are representative of the current 388th RANS use on DPG property. No changes are therefore, expected from the Proposed Action that would affect this resource category.
Visual Resources	The properties for the Proposed Action are located in a fairly isolated area of DPG where USAF operations are already being conducted.
Solid Waste	The Proposed Action would not alter the production and disposition of solids wastes currently generated and disposed of under the 388th activities.
Recreation	Recreation on DPG within the Proposed Action area is limited to hunting along the northeast boundary of DPG during limited times of the year. The Cedar Mountain Radar site is the only property used by the USAF near this hunting area. Permits sold for hunting are limited.
Infrastructure	Utilities, consisting of natural gas, electricity, and water, are supplied to the 388th facilities through the DPG infrastructure. These same resources would be used under the Proposed Action and therefore, no impacts from the Proposed Action are expected to infrastructure.
Transportation	Transportation and maintenance of the DPG roadways are discussed and analyzed in the 2003 DPG EIS. No changes are expected from the Proposed Action that would affect this resource category.

3.1 Noise

Noise or "unwanted sound" can be intermittent or continuous, steady or impulsive, stationary or transient. Humans or wildlife can be affected by noise either interfering with normal activities or diminishing the quality of the environment. The impact of noise greatly depends upon the characteristics of the noise (e.g., loudness, pitch, time of day, and duration) and the sensitivity (or perception) of the noise receptor. Perception of noise is affected by the intensity, frequency, pitch, and duration, as well as the auditory system and physiology of a particular receptor. Noise levels heard by humans or wildlife depend on such variables as distance, percentage and type of ground cover, and objects or barriers between the noise source and the receiver, as well as the atmospheric conditions. Table 3-2 provides typical noise levels of common noises to provide perspective.

Table 3-2. Common Noise Levels

Source	Decibels	Concern
Soft whisper	30	None. Normal safe levels.
Quiet office	40	
Average home, light traffic at a distance	50	
Conversational speech	60	
Busy traffic	75	May affect hearing in some individuals, depending on sensitivity, exposure duration, etc.
Noisy restaurant, subway, heavy city traffic	80	
Average factory	80 – 90	
Pneumatic drill, chain saw	100	Continued exposure to noise over 90 decibels may eventually cause hearing impairment.
Rock band concert in front of speakers, sandblasting, thunderclap	120	
Jet plane, gun shot	140	Exposure to noise at or over 140 decibels may cause pain.
Rocket pad during launch	180	Hearing loss inevitable

Source: DPG 2003

The standard unit of sound amplitude measurement is the decibel, which measures loudness. However, since the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) typically is used to measure noise as it relates to human sensitivity. The A-weighted scale deemphasizes low- and high-frequency components of sound in a manner similar to the frequency response of the human ear. The A-weighted scale is the basis for Federal and most local noise ordinances.

Sound traveling over a distance can be affected by many factors. Temperature, humidity, wind direction, barriers such as walls, forests, hills, and absorbent materials, such as soft ground and light snow, are all factors in how sound is perceived at different distances. Noise attenuates from the divergence of sound waves with distance (attenuation by divergence). In general, this mechanism results in a 6-dBA decrease in the sound level with every doubling of distance from a point source (i.e., the rate of dBA decrease from the source is based on a logarithmic scale). For example, the 84 dBA average sound level at 50 feet (for instance, the noise that might be associated with clearing and grading during construction) would be attenuated to 78 dBA at 100 feet, 72 dBA at 200 feet, and to 66 dBA at 400 feet.

Noise at the properties used by the 388th RANS results from several primary sources and activities:

- Aircraft noise and sonic booms from air testing and training activities;
- Detonations from conventional munitions, other testing activities, and ground training activities; and
- Artillery firing from conventional munitions and ground training activities.

A 1991 study conducted by the U.S. Army Environmental Hygiene Agency (USAEHA) documented outdoor noise at eight sites throughout DPG (DPG 2003). The day-night average sound level exceeded the Zone I "compatible" standard of 65 dBA at a number of sites. Although noise sources were not identified in the study, higher noise levels were attributed to aircraft, as the noisiest sites were under USAF flight tracks. The study did not identify any noise concerns within DPG office and residential areas, as noise levels within such areas were below 55 dBA (DPG 2003).

3.2 Hazardous Materials and Waste

Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material, polychlorinated biphenyls (PCBs), and lead-based paint (LBP). The U.S. Environmental Protection Agency (EPA) has authority to regulate these special hazard substances by the Toxic Substances Control Act (TSCA) Title 15 U.S.C. Chapter 53. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action. In 1988, a preliminary asbestos survey was conducted at DPG on approximately 100 buildings to define the extent of asbestos and to recommend approaches to abatement. Unless construction or renovation work is being completed on a specific building, in-depth surveys for asbestos are not conducted on buildings at DPG (USACE 2012).

Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

DPG has developed a Hazardous Waste Management Plan (HWMP) and a waste analysis plan (WAP) in DPG's Resource Conservation and Recovery Act (RCRA) permit which prescribes responsibilities, policies, and procedures for managing hazardous waste on the installation

(USACE 2012). The objective of the HWMP and WAP is to facilitate the responsible management of hazardous waste by identifying facilities that generate hazardous waste and to summarize the hazardous waste generation processes. The HWMP provides guidance for the management of these facilities and processes in compliance with RCRA regulations, and other Federal, state, and Army environmental protection laws. The WAP has been prepared to provide specific guidance for day-to-day operations associated with characterizing hazardous waste, and to facilitate compliance with DPG's Central Hazardous Waste Storage Facility (CHWSF) Storage Permit (USACE 2012).

3.2.1 Hazardous Materials and Petroleum Products

The use and storage of hazardous materials and petroleum products at existing 388th RANS sites, including asbestos, PCBs, and LBP, are described below.

English Village – UTTR-Q barracks. Environmental Data Resources (EDR) reports do not indicate evidence of hazardous materials released in the area (USACE 2012). However, site investigations have revealed that an underground storage tank (UST) of fuel oil is still located at the UTTR-Q.

- Steam pipes in the UTTR-Q building were reinsulated after an asbestos investigation. No friable asbestos occurs in the building.
- No transformers that could potentially contain PCBs are present.
- Based on the age of the UTTR-Q, it is assumed that LBP is present under newer layers of paint.

Avery Area. Several buildings in the Avery Area contain hazardous or petroleum products used by the 388th RANS (USACE 2012). Hazardous materials are all stored in marked hazardous materials cabinets.

- Buildings 1006 and 1007 in the Avery Area are 100 percent abated for asbestos. Some work has been completed in Buildings 1010, 1012, 1020, 1026, and 1030 for asbestos compliance.
- No transformers that could potentially contain PCBs are present.
- Based on the age of buildings in the Avery Area, it is assumed that LBP is present under newer layers of paint.

Cedar Mountain. Some cleaning supplies are stored at the Cedar Mountain main facility (Building 4146). Along the north side of the main building are 68 carbon dioxide tanks used for both the moisture reduction wave guide system of the radar and the fire suppression system. Two oxygen tanks and a 50-gallon drum of mineral oil are inside the building. Motor oil, batteries, and a carbon dioxide tank are stored inside the generator building (Building 7143) at the Cedar Mountain Radar site. A diesel generator is contained within secondary containment. A 500-gallon aboveground storage tank (AST) is associated with the diesel generator.

- All facilities at Cedar Mountain were built after the 1980s and are not expected to contain asbestos.
- No transformers that could potentially contain PCBs are present.
- No known LBP issues are associated with Cedar Mountain since all buildings were built after the 1980s.

Wig Mountain Area. The USAF uses and stores hazardous substances at three properties in the Wig Mountain Area: the Wig Tank Maintenance area, Wig Launch Site, and Wig Support (USACE 2012). The tank maintenance area contains oxygen and acetylene tanks and petroleum products that include hydraulic oil, gasoline, gear oil, used oil, and propane tanks. The Wig Launch Site contains five carbon dioxide tanks for fire suppression. The site shows evidence of past petroleum, oil, and lubricants spills with a 2-foot diameter area of stained and stressed vegetation. Building 7354 at Wig Support contains a flammable materials cabinet with gasoline cans, tile adhesive, disinfectant, and solvent. A mobile diesel tank (5,000 gallons) is located on the Wig Support property.

- With the exception of the Wig Launch building, all facilities were built after the 1980s and are not expected to contain asbestos.
- No transformers that could potentially contain PCBs are present.
- With the exception of the Wig Launch building, no known LBP issues are associated with the Wig area since all buildings were built after the 1980s. The Wig Launch building could contain LBP based on the age of the building.

Granite Peak. Hazardous materials and petroleum products are stored at the hazardous waste transfer point at the Granite Peak ESS. Buildings 9425 and 9423 also contain hazardous materials storage lockers that contain paint, solvents, cleaning supplies, and similar household and light commercial products (USACE 2012). A 500-gallon diesel AST is associated with the generator shed (Building 9424) at 777 and an additional 500-gallon diesel AST is associated with the generator shed Building 9434. Two 2,500-gallon propane ASTs are located at the Granite Peak site.

- All facilities were built after the 1980s and are not expected to contain asbestos.
- No transformers that could potentially contain PCBs were observed.
- No known LBP issues are associated with the Granite Peak area since all buildings were built after the 1980s.

Pad 27 Area. The backup generator is supplied by a 500-gallon diesel AST. Within the generator building are stored small bags of charcoal, 5 gallons of oil for the generator, and helium tanks that are used to inflate the balloons used in calibrating the radar system.

- All facilities were built after the 1980s and are not expected to contain asbestos.
- No transformers that could potentially contain PCBs are present.

- No known LBP issues are associated with the Pad 27 Area since all buildings were built after the 1980s.

Baker Strong Point and TS-3. No hazardous materials or petroleum products are stored at the BSP or TS-3 sites (USACE 2012).

- No buildings that could potentially contain asbestos occur at BSP or TS-3.
- No transformers that could potentially contain PCBs are present.
- No buildings that could potentially contain LBP occur at BSP or TS-3.

3.2.2 Hazardous and Petroleum Wastes

The creation of hazardous and petroleum wastes at sites used by the 388th RANS is described below.

English Village – UTTR-Q barracks. The EDR records search, a review of historical records, and site investigations did not find evidence that hazardous wastes have been generated or stored within the UTTR-Q property boundary (USACE 2012).

Avery Area. Within the Avery Area, several buildings contain petroleum storage areas, satellite accumulation points for petroleum wastes, and universal waste storage areas. Building 1001 is an open-sided structure used for the 90-day storage of automobile batteries (USACE 2012).

Cedar Mountain. A records search and site investigation revealed no evidence that hazardous wastes have been generated or stored at the Cedar Mountain site (USACE 2012).

Wig Mountain Area. Building 7261 at the Wig Tank Maintenance Area is an enclosed building used for tank maintenance. Oil from maintenance activities is captured and recycled. No ground contamination is expected from oil spills due to clean up procedures and the 4-foot thick concrete floor the tanks are placed upon (USACE 2012). All engines stored in the bunker facility are drained of fluids prior to storage.

Granite Peak. Hazardous and petroleum waste are collected at the hazardous waste transfer point at the Granite Peak ESS (USACE 2012).

Pad 27 Area. No hazardous waste is known to be stored at the PAD 27 site (USACE 2012).

Baker Strong Point and TS-3. No evidence or records show that hazardous waste and petroleum waste have been stored at BSP or TS-3 (USACE 2012).

3.3 Earth Resources

This section describes the existing earth resources in the area of the properties used by the 388th RANS. Topographic and geologic conditions are discussed first, followed by soils, seismicity, and cryptogammic crusts.

3.3.1 Topography

DPG is located within the Great Basin subdivision of the Basin and Range Physiographic Province. This province is characterized by a series of mostly isolated north-south trending mountain ranges that are separated by wide desert plains. The majority of DPG lies within the Great Salt Lake Desert, with mountains and low-lying basin areas covering the remaining portions of DPG. DPG is bordered to the northeast by the Cedar Mountains and to the south by a series of ranges and valleys, the closest of which is the Dugway Range. Topographic elevations at DPG range from 4,225 feet above mean sea level (MSL) on the lowest point of the desert floor to 7,068 feet above MSL at the summit of Granite Peak. There are no large perennial surface water bodies that lie within or border DPG; however, two large playas are located in the western and southern portions of DPG (DPG 2003).

3.3.2 Geology

Mountain ranges within or adjacent to DPG are composed primarily of Paleozoic sedimentary rocks of marine origin and small exposures of volcanic and intrusive Tertiary igneous rocks. With exception of Granite Peak and the Simpson Mountains, which are composed mainly of Precambrian metamorphic and igneous rocks, low-lying basin areas are filled with thick accumulations of sediment derived from erosion of uplifted mountain ranges. Sediments consist of Tertiary to Quaternary alluvial, colluvial, lacustrine, eolian, and volcanic material (DPG 2003).

Lake Bonneville, a large freshwater lake, covered much of western Utah and adjacent parts of Idaho and Nevada during the Pleistocene. Preserved segments of two major Lake Bonneville shorelines, the Bonneville and Provo, are evident in the eastern portion of DPG near English Village. The Bonneville shoreline is the highest of the lake's shorelines, its elevation varied across Skull Valley from about 5,230 to 5,310 feet in southern to northern portions of the valley, respectively. The maximum elevation of Lake Bonneville at DPG has been estimated to be 5,135 feet, or about 875 feet above the present-day basin floor (DPG 2003). During the recession of Lake Bonneville, the Old River Bed, located in the southeastern portion of DPG, carried drainage from the Sevier Desert toward the Great Salt Lake Desert. Few wells have penetrated the basin-fill deposits and reached underlying consolidated rock (DPG 2003).

Two unique geologic features have been identified at DPG, Granite Peak and the Devil's Postpile. Both features were identified by The Nature Conservancy in a 1993 inventory of natural areas and special features on DPG land. The Nature Conservancy ranked Granite Peak as the highest priority area and characterized it as geologically unique and deserving of consideration as a National Natural Landmark. The Devil's Postpile was ranked fifth out of 17 identified special features/natural areas at DPG (DPG 2003).

3.3.3 Soils

Thirty-three different soil types have been mapped on DPG (DPG 2003). Three soil types cover approximately 58 percent of the total area at DPG. These include the Playas (27 percent), the Playas-Saltair Complex (22 percent), and the Saltair-Playas Complex (9 percent). These soil types are found west of Granite Peak and throughout the training area. Soils at the Avery Area are a mixture of Skumpah Silt Loam Saline and Skumpah Silt Loam. The English Village area is

comprised of Medburn Fine Sandy Loam (DPG 2003). Lithologic data recorded during the drilling of several English Village water supply wells indicate that the upper 500 feet of sediment in this area consists predominantly of sand and gravel, and sediments below this depth consist primarily of fine-grained clay, tuffaceous sand, and volcanic ash. The 388th properties north of the Avery Area consist of Amtoft-Rock Outcrop Complex in the Cedar Mountains, and a mixture of mainly playa, Saltair-Playa, and Skumpah Silt Loan Wet Saline soils near the Wig Mountain sites (DPG 2003).

3.3.4 Seismicity

Utah occupies a significant segment of the Intermountain Seismic Belt, a zone of pronounced earthquake activity that extends from southern Nevada to northwestern Montana. This seismic belt corresponds to a zone of active stretching and fracturing of the earth's crust in response to deformation and uplift within the North American plate (DPG 2003). DPG is located approximately 60 miles west of the Wasatch Mountains and the associated Wasatch fault zone. Between 1962 and 1977, four earthquake epicenters were identified within DPG, and the magnitude of the associated earthquakes ranged from 1.3 to 2.3.

3.3.5 Cryptogammic Crusts

Cryptogammic crusts are a soil microcommunity consisting of fungi (Basidiomycetes), lichens, soil algae, and mosses typically occurring in semiarid regions. Cyanobacteria-dominated soil crusts are readily observed in chenopod communities of DPG. The soil crust forms when the sticky sheath of the moving bacteria forms a web of fibers. The fiber web fuses the soil together and allows for accumulation of moisture for plants in an otherwise dry climate (Gene Stouts and Associates 2007).

Soil crusts are widespread on the installation and throughout many vegetation communities. These crusts serve as an important soil stabilizer and source of nitrogen fixation in the soil. Great Basin soils are nitrogen-limited, and cryptogams are essential sources for this plant nutrient. Additionally, soil crusts moderate effects of wind- and water-caused erosion. Cryptogammic crusts are extremely fragile and sensitive to disturbances. Specifically, any soil compaction, such as human foot traffic, native game animals or livestock, or tracked vehicles may severely degrade the nitrogen-fixation capacity. Restoration of nitrogen-fixation may require 5 to 15 years before attaining the pre-impacted capacity (Gene Stouts and Associates 2007).

3.4 Water Resources

This section describes water resources in the area of the properties used by the 388th RANS. Surface water includes lakes, rivers, and streams and is important for a variety of reasons, including economic, ecological, recreational, and human health. Groundwater comprises the subsurface hydrogeologic resources of the property's physical environment. This section also discusses floodplains.

3.4.1 Surface Water

The 388th RANS properties are located with portions of three of the four surface water drainage areas in DPG. They include: Skull Valley, Dugway Valley-Government Creek area, and the Great Salt Lake Desert. The Great Salt Lake Desert drainage area covers the western and

northwestern portion of DPG and is the largest drainage within DPG (DPG 2003). Natural surface water features include surface water drainages, springs, ponds, playas, and wetlands. Constructed surface water features include wastewater lagoons, evaporation ponds, an excavated pond, a bermed pond, and roadside ditches. Natural surface water features within the Proposed Action area are limited to the playas. Government Creek is located south of the Avery Area and is ephemeral within DPG and perennial in and near the Simpson and Sheeprock Mountains southeast of DPG where the creek originates.

The climate of the Dugway Valley-Government Creek area is characterized by extreme fluctuations in temperature (average daily temperatures of 28 degrees Fahrenheit (°F) and 79°F in January and July, respectively) and minimal amounts of precipitation (approximately 8 inches annually). Annual runoff is negligible, and the region drains in a northwest direction into the Great Salt Lake Desert. Area streams are ephemeral, except for short headwater portions of a few streams located in the higher elevation mountains (DPG 2001). Because of the general aridity of the area and the permeable alluvial deposits at the base of the mountain ranges, which rapidly absorb stream flow, runoff from the Dugway Valley-Government Creek area to the Great Salt Lake Desert is minor. Some overland runoff from thunderstorms flows onto the desert; but the surface gradient toward the northwest is very slight, the few channels that exist are small and intermittent, and evaporation rates are high. Thus, essentially all the estimated 380,000 acre-feet of precipitation that falls in the area each year is consumed by evapotranspiration within the area, except for the quantity that infiltrates to recharge to groundwater system (DPG 2001).

3.4.2 Groundwater

The major source of groundwater in the Dugway Valley-Government Creek area is saturated older alluvium. Total groundwater recharge in the Dugway Valley-Government Creek area is about 12,000 acre-feet. Principal sources include snowmelt, thunderstorms, and flow from the Sevier Desert drainage through the Old River Bed. The water is transported through alluvium deposited by the ancient stream (DPG 2001).

Recent hydrogeologic studies in the Ditto and Carr areas indicate that basin-fill deposits in these areas consist of silty sand units interbedded with clay layers. The upper interbedded sand and clay unit hosts shallow groundwater and is referred to as the shallow waterbearing zone. A persistent clay layer exists about 90 feet below ground surface and is between 65 to 80 feet thick in this area. This layer is continuous throughout the Ditto and Carr areas. This clay layer acts as a barrier to vertical groundwater movement and is referred to as the confining-clay layer. The lower sand is the regional aquifer in this area and is the potable source of groundwater for the Ditto and Carr areas (DPG 2003).

3.4.3 Floodplains

A 100-year flood plain map is not available for DPG according to the U.S. Army Corps of Engineers and the Utah State Emergency Management Office. However, DPG is classified as a D-Zone which is defined as having an undetermined but potential flood hazard (DPG 2003).

3.5 Air Quality

The ambient air quality in an area can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The *Clean Air Act* (42 U.S.C. 7401 et seq.) requires the EPA to set standards for pollutants considered harmful to public health and the environment. National primary ambient air quality standards define levels of air quality EPA has determined as necessary to provide an adequate margin of safety to protect public health, including the health of sensitive populations such as children and the elderly. National secondary ambient air quality standards define levels of air quality EPA deems necessary to protect the public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. EPA has established primary standards for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (which includes particulate matter with an aerodynamic diameter less than or equal to 10 micrometers [PM_{10}] and less than or equal to 2.5 micrometers [$PM_{2.5}$]), and sulfur dioxide. Table 3-3 lists the primary and secondary standards for each criteria pollutant.

Table 3-3. National Ambient Air Quality Standards

Pollutant	Primary standards	Secondary standards	Form
Carbon monoxide			
8-hour average	9 ppm	None	Not to be exceeded more than once per year
1-hour average	35 ppm	None	
Lead			
Rolling 3-month average	0.15 µg/m^3	Same as primary	Not to be exceeded
Nitrogen dioxide			
Annual arithmetic mean	0.053 ppm	Same as primary	Annual Mean
1-hour	0.10 ppm	None	98th percentile, averaged over 3 years
Ozone			
8-hour average (2008 standard)	0.075 ppm	Same as primary	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
PM_{10}			
24-hour average	150 µg/m^3	Same as primary	Not to be exceeded more than once per year on average over 3 years
$PM_{2.5}$			
Annual arithmetic mean	15.0 µg/m^3	Same as primary	Annual mean, averaged over 3 years
24-hour average	35 µg/m^3	Same as primary	98th percentile, averaged over 3 years
Sulfur dioxide			
3-hour average	None	0.5 ppm	Not to be exceeded more than once per year
1-hour average	0.075 ppm	None	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

Source: 40 CFR part 50 (as of October 2011)
ppm = parts per million; µg/m^3 = micrograms per cubic meter

The EPA designates regions in compliance with the standards as attainment areas. Areas where the applicable standards are not being met are nonattainment areas. Portions of eastern Tooele County, near Salt Lake City, Utah, are in nonattainment for the 2006 standard for $PM_{2.5}$ and for sulfur dioxide (EPA 2011a). However, DPG is located in a portion of Tooele County that is classified as an attainment area for all criteria pollutants (Utah 2011a).

Prevention of Significant Deterioration regulations restrict criteria pollutant emissions and protect national parks and wilderness areas that are Class I air quality areas. Class I areas include national wilderness areas, memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres. In Utah, Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capitol Reef National Park, and Zion National Park are all designated as Class I (DPG 2003).

3.5.1 Air Emission Sources

Sources of criteria air pollutant emissions at DPG include generators, boilers, vehicular traffic, testing and training, and emissions from fuel storage tanks and fuel dispensing. Vehicles generate exhaust emissions from fuel combustion and vehicles on unpaved roads generate fugitive dust emissions (PM_{10}). DPG-wide criteria pollutant emissions for 2010 were 150 tons of PM_{10}, 23 tons of $PM_{2.5}$, 3.4 tons of sulfur oxides, 40 tons of nitrogen oxides, and 34 tons of carbon monoxide (DPG 2011). Most of the PM_{10} and $PM_{2.5}$ emissions were from fugitive dust on unpaved roads.

Title V of the 1990 Clean Air Act Amendments applies to DPG. The Title V Operating Permit lists the emission sources that are permitted to discharge air contaminants and the emission limitations, standards, and conditions for each source (Utah 2011b).

Diesel generators are currently being used on 388th sites (Shane 2012). The generators are shown in Table 3-4.

Table 3-4. Diesel Generators used by the 388th RANS at DPG

Site	Size (kilowatt)	Run time in 2011 (hours)	Fuel use in 2011 (gallons)
Cedar Mountain	175	76.2	1005.8
Wig Mountain area	1000	15.0	1065.5
Wig Mountain area	1000	5.0	355.5
Pad 27 Area	100	474.8	3561.0
Granite Peak	300	23.2	522.0
Granite Peak	60	22.8	107.2
TACAN	20	17.1	27.4

Source: Shane 2012

3.5.2 Greenhouse Gases

The burning of fossil fuels such as coal, diesel, and gasoline emits carbon dioxide, which is a greenhouse gas. Greenhouse gases can trap heat in the atmosphere, similar to the glass walls of a greenhouse, and have been associated with global climate change. Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). The Intergovernmental Panel on Climate Change, in its

Fourth Assessment Report, stated that warming of the Earth's climate system is unequivocal, and that most of the observed increase in globally averaged temperatures since the mid-20th Century is very likely due to the observed increase in concentrations of greenhouse gases from human activities (IPCC 2007). These gases are well mixed throughout the lower atmosphere, so emissions would add to cumulative regional and global concentrations of carbon dioxide. The effects from an individual source therefore cannot be determined quantitatively.

On April 2, 2007, the U.S. Supreme Court ruled in *Massachusetts et al. vs. U.S. Environmental Protection Agency* that the EPA has the authority to regulate carbon dioxide and other greenhouse gases as air pollutants under the *Clean Air Act*. On December 7, 2009, the EPA Administrator signed two findings on greenhouse gases under Section 202(a) of the Act. An Endangerment Finding stated that the projected concentrations of greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations, and a Cause or Contribute Finding stated that the combined emissions of these greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution. Since that time, EPA has promulgated regulations for emissions of greenhouse gases under the *Clean Air Act*. These regulations define when permits are required for new and existing industrial facilities. Beginning in July 2011, operating permits are required for all sources that emit at least 100,000 tons per year of carbon dioxide equivalent. Sources that emit less than 50,000 tons per year of carbon dioxide equivalent will not be required to obtain permits for greenhouse gases before 2016 (EPA 2011b).

The CEQ has issued draft guidance (CEQ 2010) on how to consider the effects of climate change and greenhouse gases. The guidance includes the recommendation that if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of carbon dioxide equivalent greenhouse gases on an annual basis, than a quantitative and qualitative analysis may be meaningful. The reference point of 25,000 metric tons is not a standard for indicating significant or insignificant effects.

3.6 Biological Resources

This section describes existing biological resources at DPG. It focuses on plant and animal species or habitat types that are typical or are an important element of the ecosystem, are of special category importance (of special interest due to societal concerns), or are protected under state or Federal law or statute regulatory requirement. Vegetation is discussed first, followed by wildlife, wetlands, and sensitive species.

3.6.1 Vegetation

Vegetative types on DPG have been categorized into 10 different vegetation community types (Gene Stout and Associates 2007). Generally described, DPG is a cold northern desert shrub habitat with halomorphic soils, interspersed with insular islands of sagebrush-steppe and juniper. The Dugway Valley and the lower slopes of the surrounding mountains are primarily a northern salt desert shrub type resulting from the low average annual precipitation and a high rate of evaporation during the summer months (DPG 2001).

3.6.2 Wildlife

DPG has a diversity of habitats that support a rich and diverse array of fauna. Wildlife known to occur on DPG consists of both year-round resident and migratory/transient species. Fauna observed at DPG consists of 205 species of birds, 53 species of mammals, and 14 species of reptiles/amphibians (Gene Stout and Associates 2007). Of the habitat types occurring on DPG, vegetated dunes have the greatest variety of fauna species. No fish species are known to occur on DPG. However, because native fish are present in Redden Spring, it is possible they could be present on DPG (Gene Stout and Associates 2007).

3.6.3 Wetlands

Several wetland areas have been identified at DPG as supported by two wetland delineation studies that were conducted at the installation. A nonjurisdictional wetlands study investigated Cane Springs, Bitter Springs, Mustang Springs, North Fish Springs, Orr Springs, Black's Pond, the sewage lagoons at the English Village Wastewater Treatment Facility, and the DPG Playa (Gene Stouts and Associates 2007). The field study followed wetland delineation criteria developed by the U.S. Army Corps of Engineers. This study identified Cane Springs, North Fish Springs, Orr Springs, and a portion of Black's Pond and Mustang Springs as wetlands (Figure 3-1), and the DPG Playa and a portion of Black's Pond as "waters of the U.S." (DPG 2003). No wetlands exist within the 388th property boundaries.

3.6.4 Special Interest Natural Areas and Rare, Threatened, and Endangered Species

The *Endangered Species Act of 1973*, as amended, protects endangered species and the ecosystems upon which they depend. Endangered species are defined as: "any species which is in danger of extinction throughout all or a significant portion of its range," and is listed as endangered under the *Endangered Species Act*. A threatened species is "any species which is likely to become endangered in the foreseeable future throughout all or a significant portion of its range" and is listed as threatened under the *Endangered Species Act*. Candidate species are those that are eligible for listing as endangered or threatened. Candidate species have no protection under the Act, but are often considered for planning purposes. The U.S. Fish and Wildlife Service (USFWS) maintains a list of protected species by county. Table 3-5 lists all federally-listed threatened, endangered, or candidate species which potentially occur in Tooele County (USFWS 2012).

Table 3-5. Federally Threatened, Endangered, and Candidate Species in Tooele County, Utah

Species	Status	Habitat
Greater sage-grouse *(Centrocercus urophasianus)*	Candidate	Sagebrush plains, foothills, and mountain valleys
Least chub *(Iotichthys phlegethontis)*	Candidate	Spring-fed pools
Ute ladies'-tresses *(Spiranthes diluvialis)*	Threatened	Wet meadows, streams, or lake margins
Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)*	Candidate	Riparian habitats

SOURCE: USFWS 2012

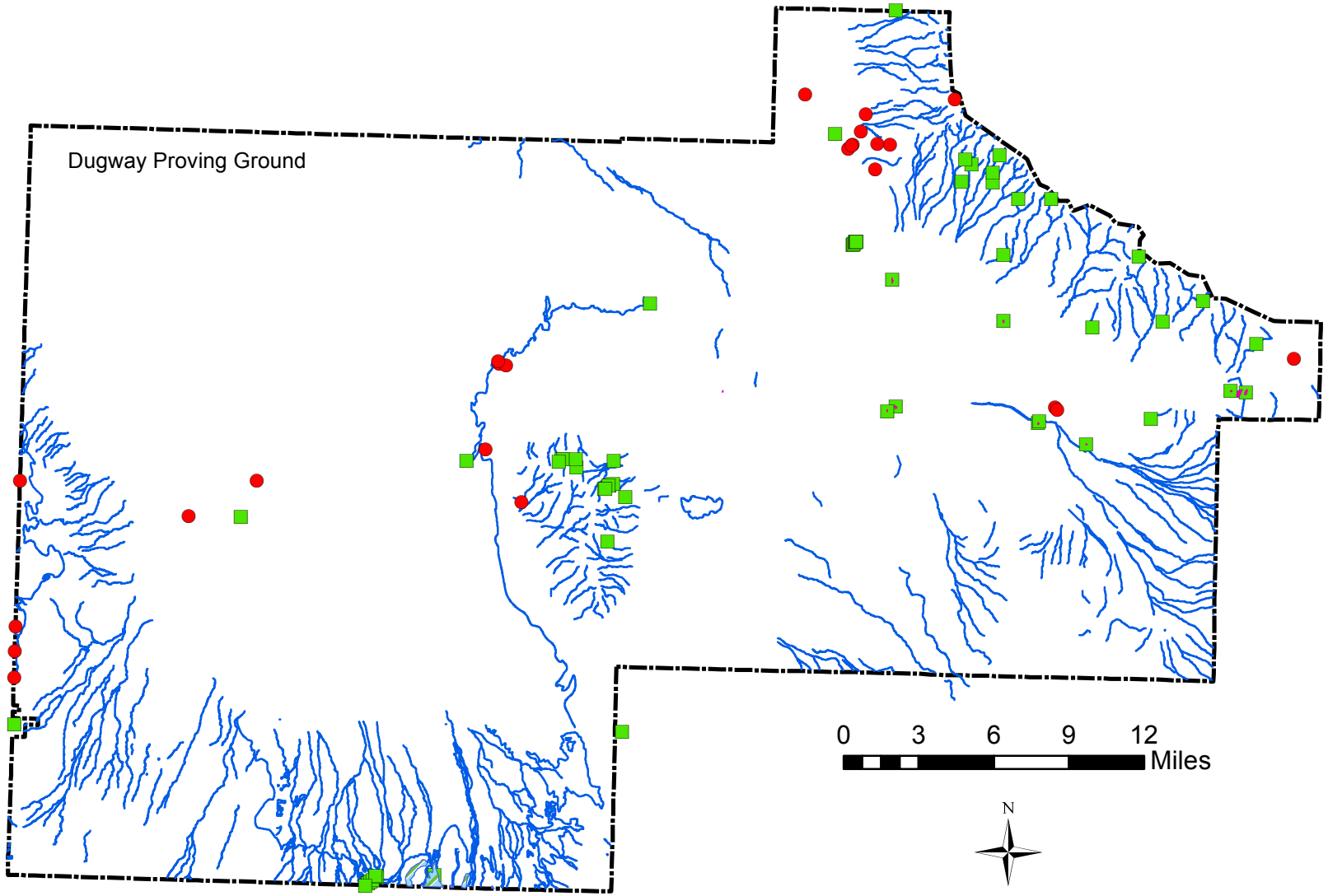


Figure 3-1. Water Resources in Relation to the USAF Property Locations on DPG, UT.

There are no plant species known to occur on DPG that are federally-listed as threatened or endangered. The federally-threatened Ute ladies'-tresses (*Spiranthes diluvialis*) is known to occur close to DPG; however, little or no suitable habitat exists on DPG. There are some plant species on DPG designated by resource agencies as species of concern, such as the Bureau of Land Management-listed Cooper's hymenoxys (*Hymenoxys cooperi*), helleborine (*Epipactis helleborine*), king's snagdragon (*Sairocarpus kingii*), and Pohl's milkvetch (*Astragilis lentiginosis var. pohlii*) (Gene Stout and Associates 2007).

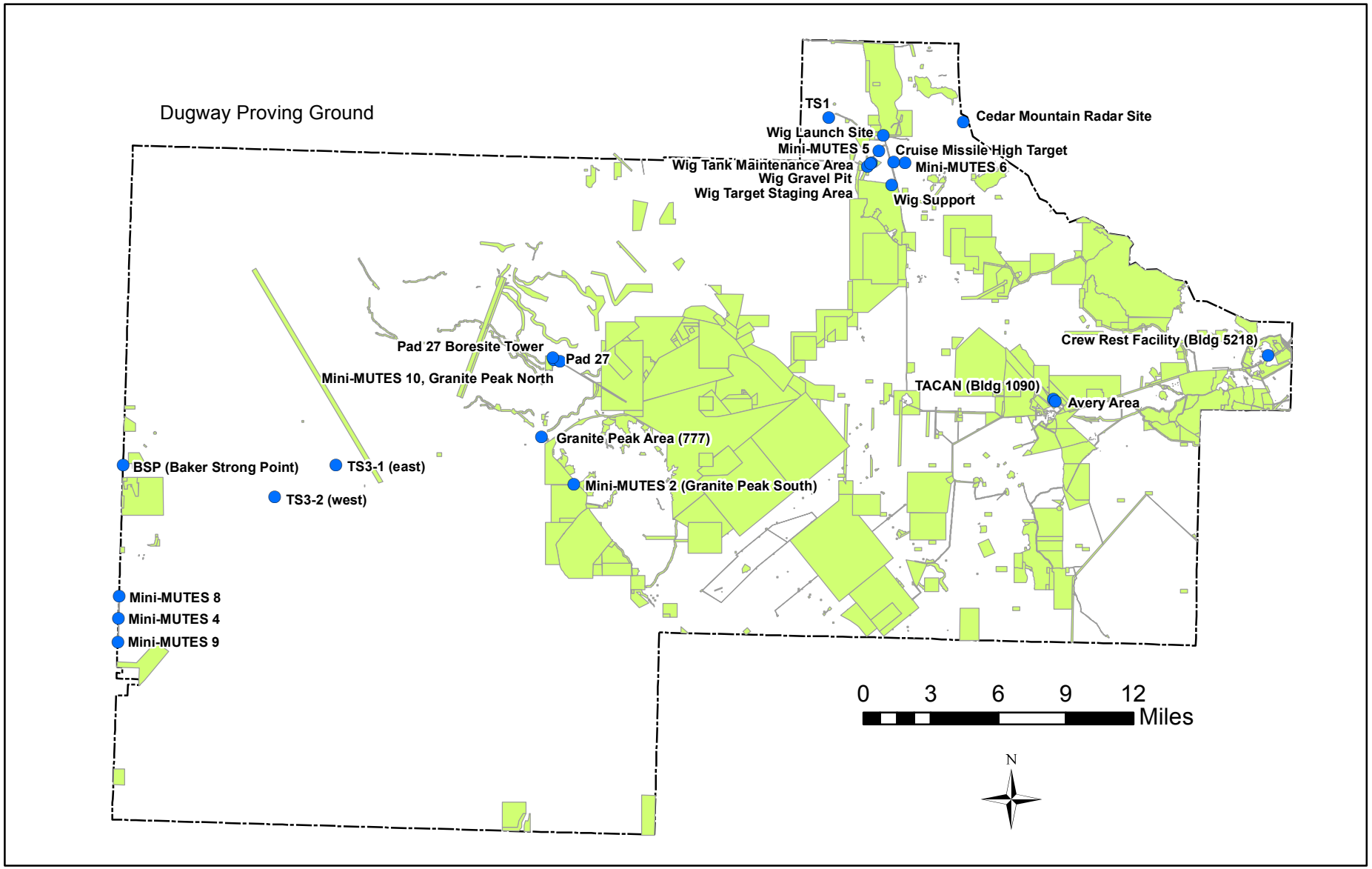
There are no species of wildlife known to occur on DPG that are federally-listed as threatened or endangered. The federal-candidate yellow-billed cuckoo is the "Western" yellow-billed cuckoo, and would be considered a rare visitor on DPG. However, some species occurring on the installation are designated by resource agencies as species of concern. Species included on the Utah sensitive species list and additional species of conservation concern are listed by USFWS, Utah Division of Wildlife Resources, Utah Partners in Flight, or Bureau of Land Management. Some examples include the ferruginous hawk (*Buteo regalis*), kit fox (*Vulpes macrotis*), and the golden eagle (*Aquila chrysaetos*) (Gene Stout and Associates 2007). The bald eagle (*Haliaeetus leucocephalus*) is considered to have a potential for occurrence as a winter visitor particularly since they are common wintering birds on Fish Springs National Wildlife Refuge.

3.7 Cultural Resources

Cultural resources are historic properties as defined by the National Historic Preservation Act (NHPA), cultural items as defined by the Native American Graves Protection and Repatriation Act (NAGPRA), archaeological resources as defined by the Archaeological Resources Protection Act (ARPA), sacred sites as defined by Executive Order (EO) 13007, and collections as defined in 36 CFR 79, Curation of Federally-Owned and Administered Collections. A number and variety of cultural resources that have been identified at DPG include, but are not limited to, buildings, structures, prehistoric and historic archeological sites, native sacred sites, and cemeteries (DPG 2003).

3.7.1 Cultural Resources Inventory

Approximately 131,177 acres (about 16 percent) of DPG have been systematically inventoried for cultural resources, with a total of 1,335 cultural sites recorded on the installation. One traditional cultural property (a NHPA historic property eligible for the National Register of Historic Places (NRHP) due to cultural or religious significance to Native American people or other cultural groups) has been recorded on the installation. The majority of the 388th FW leased properties fall within the areas previously surveyed for cultural resources (Figure 3-2).



DPG Dugway Proving Ground
MUTES Multiple Threat Emitter System
USAF United States Air Force
UT Utah

Legend

- Dugway Proving Ground Installation boundary
- Cultural Survey
- 388th Property Locations

Figure 3-2. Cultural Resource Survey Areas in Relation to the USAF Property Locations on DPG, UT.

3.7.2 National Register of Historic Places Eligibility

Eligibility of archeological sites for inclusion on the NRHP is the principal criterion determining management prescriptions. Generally, sites fall into one of three categories with regard to NRHP eligibility.

- ***Eligible***: These sites have been determined eligible for the NRHP and therefore are subject to protection. They should not be affected without consultation per Section 106 of the NHPA and development of a plan to mitigate adverse effects.
- ***Ineligible***: These sites have been determined ineligible for the NRHP and do not require protection from adverse effects.
- ***Potentially eligible***: Further investigation is required to determine NRHP eligibility. Therefore, these sites are potentially eligible for the NRHP and require protection until determinations of eligibility can be made.

Nearly all of the DPG structures have been evaluated for NRHP eligibility and the ranges are currently being evaluated. Property types included test and evaluation facilities, control and instrumentation buildings, a training grid, World War II operational support facilities, research and development laboratories, and non-military sites (Gene Stout and Associates 2007). Although the Avery Area has a significant Cold War military history, none of the buildings, structures, or landscapes retains sufficient historic fabric to meet the criteria for eligibility (Panamerican Consultants 2009).

The original route for the Lincoln Highway went from Salt Lake City through Tooele, Clover, over Johnson's Pass to Orr's Ranch (directly north of where the present DPG gate now stands), to a landmark designated “County Well” (on the east side of DPG, near Ditto Area), and then in a sweeping curve, approximated the route of the Pony Express and Overland Mail around the southern end of the desert to Dugway, Fish Springs, and Callao. In 1915, a new route was proposed that would straighten out the curve at the south end of the Great Salt Desert and would shorten the distance between Granite Peak and Black Point known as the “Goodyear Cutoff” (DPG 2001) or Goodyear Road. There are historic wooden culverts dating from the construction of the Lincoln Highway located 7.7 and 16.3 miles west of the junction with Stark Road and the Granite Peak North site. The Lincoln Highway Bridge was listed on the NRHP in 1977.

3.8 Socioeconomics

This section describes the existing socioeconomic conditions for Tooele County, the region of influence (ROI), which would provide the necessary goods and services to the community of Dugway, Utah and DPG, including food, gasoline, and miscellaneous supplies. Socioeconomic factors include economic development, demographics, housing, and public services. Socioeconomic factors for the county were compared to those for state of Utah.

3.8.1 Economic Development

The U.S. Census Bureau (2012a) reported that the total labor force within the state of Utah was 1,349,177 and the total labor force within Tooele County was 26,940 for the period of 2008-2010. Statistics from the 2008-2010 U.S. Census period indicate that the average per capita

income was lower for Tooele County than Utah, but the median household income was higher than for Utah (Table 3-6). Tooele County's average annual unemployment for the 2008-2010 period was 4.4 percent, which was similar to the state's rate of 4.8 percent. Table 3-6 displays selected income characteristics for Tooele County and Utah.

Table 3-6. Regional Income Statistics (2008-2010)

Area	Workforce	Per Capita Income ($)	Median Household Income ($)	Unemployment Rate (%)
Utah	1,349,177	22,828	55,764	4.8
Tooele County	26,940	21,613	59,528	4.4

SOURCE: U.S. Census Bureau 2012a

The top three industry sectors within Utah and Tooele County are: (1) educational services, and health care and social assistance; (2) retail trade; and (3) professional, scientific, and management, and administrative and waste management services (U.S. Census Bureau 2012a). The top three occupations in both Utah and Tooele County are: (1) management, professional, and related occupations; (2) sales and office occupations; and (3) service occupations. Table 3-7 displays selected employment statistics.

Table 3-7. Regional Employment Statistics (2008-2010)

Area	Top Three Industries (%)	Top Three Occupations (%)
Utah	1 – Educational services, and health care and social assistance (21.1) 2– Retail trade (12.5) 3 – Professional, scientific, and management, and administrative and waste management services (10.8)	1 – Management, professional, and related occupations (35.3) 2 – Sales and office occupations (27.3) 3 – Service occupations (15.5)
Tooele County	1 – Retail Trade (15.6) 2 – Educational services, and health care and social assistance (13.9) 3 – Professional, scientific, and management, and administrative and waste management services (11.8)	1 – Management, professional, and related occupations (31.7) 2 – Sales and office occupations (27.7) 3 – Service occupations (14.9); and production, transportation, and material moving occupations (14.9)

SOURCE: U.S. Census Bureau 2012a

3.8.2 Demographics

Both Tooele County and Utah experienced significant growth from 2000 to 2010. Tooele County's growth was nearly 20 percent higher than the state's rate of growth (U.S. Census Bureau 2012a, U.S. Census Bureau 2012b).

According to the 2008-2010 U.S. Census estimates, Tooele County and the state had similar percentages of high school graduates (U.S. Census Bureau 2012a). The percentage of individuals with a Bachelor's Degree or higher was significantly higher for the state than Tooele County. Table 3-8 provides selected statistics for population trends and educational attainment.

Table 3-8. Regional Population and Education (2008-2010)

Area	2000 Population	2010 Population	Population Trend 2000-2009 (%)	% High School Graduates	% Bachelor Degree or Higher
Utah	2,233,169	2,763,885	+23.8	90.6	29.2
Tooele	40,735	57,228	+40.1	91.6	17.7

SOURCES: U.S. Census Bureau 2012a; U.S. Census Bureau 2012b

3.8.3 Housing

Tooele County had housing occupancy rates similar to the state's rates. Housing statistics within the region reveal that the median home value was significantly lower in Tooele County than the state. Selected housing characteristics related to occupancy status and median house values are presented in Table 3-9.

Table 3-9. Regional Housing Characteristics (2008-2010)

Area	Number of Housing Units	Occupied Houses (%)	Owner-Occupied (%)	Renter-Occupied (%)	Median Value
Utah	970,478	90.0	70.5	29.5	$ 225,400
Tooele County	19,295	95.4	73.8	26.2	$ 191,200

SOURCE: U.S. Census Bureau 2012a

3.8.4 Public Services

Schools. Within the ROI there are 25 public schools in Tooele County (Public School Review 2012). Approximately 13,300 students are enrolled in these schools. There is only one private school in the county, with enrollment of 125 elementary school students (Private School Review 2012).

Health. Mountain West Medical Center is a 38-bed facility located at 2055 North Main Street, Tooele, Utah (Hospital-Data 2012), and offers cardiac, critical care, emergency, home hospice, imaging, laboratory, maternity, surgical, rehabilitation, and surgical services (Mountain West Medical Center 2012). Mountain West Medical Center serves the communities of Tooele, Grantsville, Stansbury Park, Erda, Lake Point, Stockton, Rush Valley, Vernon, Pine Canyon, Dugway, and Wendover.

Law Enforcement. The Tooele Sheriff's Office provides law enforcement services to Tooele County. The department is comprised of corrections, dispatch, investigations, patrol units, and special operations division (Tooele County 2012a). The Utah Highway Patrol also has an office within the ROI. The Highway Patrol's mission is to reduce crime and crashes and works in conjunction with other law enforcement agencies in the area.

Fire Protection. North Tooele County Fire District was established in 1987, and provides service to a population of 10,000 people within the ROI. The fire department is staffed by over 40 volunteer firefighters located in four stations (North Tooele County Fire District 2010).

Many of the local communities also have fire departments providing service, including Dugway, which has two fire stations (Fire Fighting News 2012).

Recreation. There are a number of opportunities for recreation within the ROI including camping, swimming, and horseback riding (Tooele County 2012b). The county is currently working on a master plan to connect the county's communities through a series of trails. Tooele County hosts a number of special events, which include Deseret Peak Arenacross, Deseret Peak Stampede Days, Demolition Derby, a rodeo, and the county fair.

3.9 Environmental Justice

Environmental justice is the fair treatment for people of all races, cultures, and incomes, regarding the development and implementation (or lack thereof) of environmental laws, regulations, and policies. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs Federal agencies to address environmental and human health conditions in minority and low-income communities. A memorandum from former President Clinton concerning EO 12898 stated that Federal agencies would collect and analyze information concerning a project's impacts on minorities or low-income groups when required by NEPA. If such investigations find that minority or low-income groups experience a disproportionate adverse impact, then avoidance or mitigation measures are necessary. This section describes the distribution of minority and low-income populations for the DPG ROI.

The initial step in the environmental justice analysis process is the identification of minority populations and low-income populations that might be affected by implementation of the proposed action or alternatives. For environmental justice considerations, these populations are defined as individuals or groups of individuals, which are subject to an actual or potential health, economic, or environmental threat arising from existing or proposed Federal actions and policies. Low income, or the poverty threshold, is defined as the aggregate annual mean income for a family of four correlating to $22,050 or for a family of three correlating to $18,310 in 2010 (Department of Health and Human Services 2011).

According to the U.S. Census, the percent of population within Tooele County and Utah as a whole considered minority was lower than the nation. Tooele County's minority population accounted for 5.4 percent of total population, while the minority population of the state was 10.4 percent. The national percentage of population considered minority during the same time was significantly higher, at 25.7 percent (U.S. Census Bureau 2012a). Residents identifying themselves as American Indian and Alaska Native, Black/African American, and Asian were the top three categories comprising the minority population in both the state and county.

The U.S. Census Bureau (U.S. Census Bureau 2012a) estimates 11.5 percent of individuals in the state of Utah were below poverty level compared to 7.2 percent in Tooele County. Poverty rates for the state of Utah were also higher than those within Tooele County for those under age 18. Poverty rates for those over age 65 were similar. Table 3-10 presents selected regional minority population and poverty statistics.

Table 3-10. Regional Minority Population and Poverty Levels (2008-2010)

Area	Minority Population (%)	% Individuals Below Poverty Level	% Below Poverty Level (Under Age 18)	% Below Poverty Level (Over Age 65)
Utah	10.4	11.5	13.0	6.7
Tooele County	5.4	7.2	7.7	6.0

SOURCE: U.S. Census Bureau 2012a

On April 21, 1997, President Clinton issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; because they eat, drink, and breathe more in proportion to their body weight; because their size and weight can diminish protection from standard safety features; and because their behavior patterns can make them more susceptible to accidents. Based on these factors, President Clinton directed each Federal agency to make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children. President Clinton also directed each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

It is USAF policy to fully comply with EO 13045 by incorporating these concerns in decision-making processes supporting USAF policies, programs, projects, and activities. In this regard, the USAF ensures that it would identify, disclose, and respond to potential adverse social and environmental impacts on children within the area affected by a proposed USAF action.

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4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the potential effects of all alternatives on the affected environment.

4.1 Noise

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a proposed action. Potential noise impacts resulting from the Proposed Action and alternatives are evaluated with respect to the potential for:

- Annoyance – noise can impact the performance of various every day activities such as communication and watching television in residential areas. Sound levels that cause annoyance vary greatly by individual and background conditions.
- Hearing loss – one-time exposure to an intense "impulse" sound such as an explosion or by long or repeated exposure to sounds at or above 85 dBA can cause hearing loss (NIDCD 2007).

4.1.1 Proposed Action Alternative

Under the Proposed Action, the USAF would renew its lease with DPG to continue operations at the identified 388th facilities. Activities conducted at most of these facilities were analyzed for noise impacts in the 2003 DPG EIS. The EIS concluded that DPG's isolated location minimizes noise impacts from testing of conventional munitions on the surrounding environment; however, localized impacts would occur from DPG activities. The primary impact to people would occur from annoyance, although there is also a potential for a health hazard from very loud noise events (DPG 2003). Activities at the Wig Launch area were not specified and analyzed in the 2003 DPG EIS; however, noise impacts from launching from this facility occur only 8 to 10 times per year with the facility isolated from any human receptor populations. For all the testing and training activities conducted west of the Avery Area, receptors for noise are limited to personnel conducting the tests and wildlife. Due to the isolation of DPG, noise impacts from the Proposed Action to surrounding communities and even the DPG communities are negligible.

4.1.2 No Action Alternative

Under the No Action Alternative, the USAF would not renew its lease with DPG and activities associated with the 388th RANS would no longer occur at DPG. A reduction in noise would occur with the elimination of USAF testing and training supported by the 388th RANS at DPG.

4.2 Hazardous Materials and Waste

Potential impacts from hazardous materials and waste management are considered significant if the Proposed Action or alternatives would:

- Result in noncompliance with applicable Federal and state regulations; or
- Increase the amounts generated or procured hazardous materials beyond current permitted capacities or management capabilities.

4.2.1 Proposed Action Alternative

Under the Proposed Action, the USAF would renew its current lease with DPG for exclusive use of facilities and infrastructure on DPG and continue current operations and activities associated with each property under the lease. As a result, no changes would occur from existing conditions and no additional impacts would occur from hazardous materials and waste. The 2003 DPG EIS identified impacts from materials and waste as increased materials usage and found that storage facilities and handling procedures already in place would be adequate for projected volumes, and that the management of the waste streams would be highly regulated. The fuel oil tank at the UTTR-Q barracks is in the process of being removed from the facility by the 388th RANS, thus reducing hazardous waste storage at the site. In addition, measures taken at the Tank Maintenance facility, such as capture and recycling of waste and the 4-foot thick concrete slab, reduce the possibility of soil contamination from petroleum products at the site.

4.2.2 No Action Alternative

Under the No Action Alternative, the USAF would not renew its lease with DPG. The use and storage of hazardous materials and waste by the 388th RANS would be eliminated.

4.3 Earth Resources

Potential impacts to earth resources from the Proposed Action or alternatives would be considered significant if they were to:

- Expose people or structures to major geologic hazards;
- Cause substantial erosion or siltation;
- Cause substantial land sliding; or
- Cause substantial damage to unique geological features.

4.3.1 Proposed Action Alternative

The mission and support activities conducted under the Proposed Action Alternative result in ground disturbance from vehicular traffic, ordnance testing, and facility/equipment maintenance. For activities covered under the 2003 DPG EIS, impacts to earth resources included:

- Increased soil compaction and erosion
- Reduced soil exposure
- Potential accumulation of soil contaminates

Soil compaction is an adverse impact expected to occur as a result of ground disturbance caused by various activities required under the Proposed Action. 388th RANS activities, not analyzed in the 2003 DPG EIS, that would increase ground disturbance include movement of tanks to and from the tank maintenance area for service and the movement and storage of targets at the Wig Target Staging Area. Although tracked vehicles can be more damaging to soils than wheeled vehicles because of the chopping action of track cleats (DPG 2003), only 4 to 6 tanks are serviced annually at the site. In addition, the Wig Target Staging Area is accessed only 30 days

per year and the impacted area is limited to less than 3 acres. These two areas are adjacent to one another and soil disturbance is localized and temporally limited.

Increased ground disturbance can cause a potential increase in soil erosion. Because most of the soils at DPG are well-drained and moderately permeable, water erosion hazard is generally slight to moderate (DPG 2003). Soil erosion is a long-term, adverse impact that is expected to continue with implementation of the Proposed Action Alternative. These impacts are, however, limited to the playa impact areas, and a small acreage of land that is not specifically used for training, such as the Wig Target and Tank Maintenance areas. Impacts to soil erosion can be minimized in the non-target areas by using similar ingress and egress access in already impacted areas. Impacts to the playa impact areas from testing and training are not expected to increase under the Proposed Action Alternative and impacts to these areas were discussed in the 2003 DPG EIS.

4.3.2 No Action Alternative

Under the No Action Alternative, the 388th RANS operations would no longer occur at the leased properties throughout DPG. Soil erosion and compaction would not occur in the Wig Area from target staging and tank maintenance. The impact areas would continue to see soil erosion as other testing and training activities occur in these areas.

4.4 Water Resources

Potential impacts to water resources, including surface water and groundwater, are considered significant if the Proposed Action or alternatives would:

- Irreversibly diminish water resource availability, quality, and beneficial uses;
- Reduce water availability or interfere with a potable supply or water habitat;
- Create or contribute to overdraft of groundwater or exceed a safe annual yield of water supply sources;
- Result in an adverse effect on water quality or an endangerment to public health by creating or worsening adverse health hazard conditions;
- Result in a threat or damage to unique hydrological characteristics;
- Destroy, lose, or degrade jurisdictional wetlands (as defined by Section 404 of the *Clean Water Act*); or
- Violate an established law or regulation that has been adopted to protect or manage water resources of an area.

4.4.1 Proposed Action Alternative

Activities associated with the future mission at DPG as discussed in the 2003 DPG EIS, included impacts to water resources from:

- Increase in wastewater
- Increase in localized surface water runoff
- Potential surface water degradation from deposition of airborne mission materials in the springs near the playa and Fish Springs National Wildlife Refuge
- Anticipated increase of water use of 10 percent which would cause a slight lowering of the water table but less than historic water use at DPG

Other than springs that are fed by groundwater discharge, natural surface water flow is ephemeral or intermittent in surface water drainages at DPG. Under the Proposed Action, large-scale changes to the natural surface water flows are not expected as impermeable surfaces are not expected to be altered or increased with the lease renewal. Activities associated with the 388th RANS testing and training would cause ground disturbance resulting in the potential for soil erosion and compaction which could increase localized surface water runoff in the Wig Area. However, due to the high evaporation rate at DPG, these impacts are expected to be insignificant in the low-lying basin areas where the topography is relatively flat (DPG 2003) and the majority of the 388th activities occur. The 388th RANS would follow the DPG Installation Spill and Contingency Plan at all leased properties to prevent/minimize any adverse impacts to water resources. Added measures, such as the thick concrete slab for the Wig Tank Maintenance facility and the draining of target fluids prior to storage, decrease the likelihood that spills would impact water resources. Impacts to water resources from the lease renewal are therefore expected to be insignificant.

4.4.2 No Action Alternative

Under the No Action Alternative, the USAF would not renew its lease with DPG and 388th RANS activities at the leased properties would cease. Additional adverse impacts from localized water runoff and potential spills from the 388th activities would be eliminated.

4.5 Air Quality

Potential impacts to air quality are considered significant if the Proposed Action or alternatives would:

- Increase ambient air pollution above any NAAQS
- Contribute to an existing violation of any NAAQS
- Interfere with or delay timely attainment of NAAQS
- Impair visibility within any federally mandated Prevention of Significant Deterioration Class I area
- Cause direct emissions of 25,000 metric tons of carbon dioxide equivalent or more

4.5.1 Proposed Action Alternative

Air quality potentially could be negatively impacted from current activities associated with the DPG mission and air testing and training mainly from PM_{10} emissions and fugitive dust (DPG 2003). Under the Proposed Action, the USAF would renew its current lease with DPG for exclusive use of facilities and infrastructure on DPG and to continue current operations and activities associated with each property under the lease. As a result, no changes would occur from existing conditions and no additional impacts would occur toward meeting the NAAQS. The Proposed Action would not change existing greenhouse gas emissions and would not exceed an additional 25,000 metric tons of carbon dioxide equivalent.

4.5.2 No Action Alternative

Under the No Action Alternative, the USAF would not renew its lease with DPG. Emissions from 388th RANS vehicle use, generators, and other sources would be eliminated. Existing greenhouse gas emissions from activities by the 388th RANS would be eliminated. No additional emission sources would be created.

4.6 Biological Resources

Potential impacts to biological resources are considered significant if the Proposed Action or alternatives would:

- Affect a threatened or endangered species;
- Substantially diminish habitat for a plant or animal species;
- Substantially diminish a regionally or locally important plant or animal species;
- Interfere substantially with wildlife movement or reproductive behavior;
- Result in a substantial infusion of exotic plant or animal species; or
- Destroy, lose, or degrade jurisdictional wetlands (as defined by Section 404 of the *Clean Water Act*).

EO 11990, *Protection of Wetlands*, requires Federal agencies to avoid actions, to the extent practicable, which would result in the location of facilities in wetlands.

4.6.1 Proposed Action Alternative

Impacts to biological resources generally occur because of habitat modification; land disturbance; disturbance to or taking of rare, threatened, or endangered species; or exposure to environmental contaminants. DPG's future programs, as analyzed in the 2003 DPG EIS, were expected to impact biological resources through:

- Increased direct disturbance or destruction of vegetation
- Soil compaction and erosion
- Land disturbance which causes damage to or loss of wildlife habitat
- Potential decline in the overall survival rates for some species
- Increased environmental stress to wildlife from noise and overhead motion
- Increased human presence which affects wildlife patterns and behaviors

Activities at the 388th properties located north of Avery, such as Wig Mountain and the Cedar Mountains, not analyzed in the 2003 DPG EIS, could potentially affect the feral horse and pronghorn populations that use this northern portion of DPG. Minimal short-term impacts from vehicular movement, including tanks, to and from these areas would occur under the Proposed Action and result in occasional interference of wildlife movement. No additional impact to vegetation from the Proposed Action is expected as the lease facilities occur in already impacted or low-vegetated areas.

Threatened and endangered species are not known to inhabit the Proposed Action site; however, species of concern designated by other agencies could potentially be affected. Activity at the Wig Mountain Area, specifically at the Wig Launch site, could potentially flush golden eagles from their nests during the nesting, incubation, and fledging season, which is approximately January through July, during the calendar year. Although the Wig Launch site is more than a mile from historic golden eagle nests, golden eagles may be alarmed by the sight or sound of launches from the area. The potential for significant impacts is limited due to the limited duration and limited number of tests at the Wig Launch site and the implementation of the DPG eagle monitoring plan. No wetlands would be impacted with implementation of the Proposed Action Alternative. The USFWS had no comments on the Proposed Action (Knight 2012).

4.6.2 No Action Alternative

Under the No Action Alternative, vehicular traffic to the Wig Mountain and Cedar Mountain area would decrease reducing the impacts to ungulate population movement. Fewer testing and training activities in the Wig Launch Area would decrease the potential for flushing golden eagles from their nests.

4.7 Cultural Resources

Potential impacts to historic properties and/or archaeological resources are considered significant if the Proposed Action or alternatives would:

- Physically destroy, damage, or alter all or part of the property;
- Physically destroy, damage, alter or remove items from archaeological contexts without a proper mitigation plan;
- Isolate the property from or alter the character of the property's setting when that character contributes to the property's qualification for the NRHP;
- Introduce visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- Neglect a property resulting in its deterioration or destruction; or
- Transfer, lease, or sell the property (36 CFR 800.9[b]) without a proper preservation plan.

4.7.1 Proposed Action Alternative

Impacts to cultural resources from DPG's future programs, as analyzed in the 2003 DPG EIS, included:

- Potential damage to or unexpected discovery of paleontological resources
- Potential direct and/or indirect damage or loss to unsurveyed cultural resource sites from mission-related activities
- Increased access from increased activities on DPG could lead to the increase in cultural resources vandalism and theft
- Potential for situations when the importance of the DPG mission activity exceeds the importance of an NRHP-eligible site, leading to loss of the site but with required mitigation

Potential impacts to cultural resources from the Proposed Action would not be significant. The Proposed Action would not affect any known NRHP-eligible archaeological or historical sites, and no such sites occur in the properties considered for lease. None of the buildings or structures at the Avery Area were found to retain sufficient historic fabric to meet the criteria for NRHP eligibility. Although impacts from operations at the Avery Area were discussed in the 2003 DPG EIS, NRHP eligibility determination was made after the EIS publication.

Historic wooden culverts dating from the construction of the Lincoln Highway occur along the Goodyear Road which is used by the 388th RANS for travel to the TS3 and BSP sites. Although travel along this road is not likely to affect these culverts, an extensive washout in the winter of 2010-2011 from 9.8 miles to 15.6 miles west of the junction with Stark Road necessitated the rebuild of that portion of the road by the 388th RANS. In the course of road re-construction modern culverts were used to replace three historic culverts which were destroyed in the washout. Remnants of the wooden culverts are still visible to the north of Goodyear Road in this area. The 388th RANS will continue to coordinate with the DPG cultural resource specialist, and in accordance with DPG's Integrated Cultural Resources Management Plan (ICRMP) to minimize impacts to the remaining historical culverts.

The majority of the leased properties fall within the areas previously surveyed for cultural resources (DPG 2001). However, if during 388th RANS activities at any of the leased sites, any potential historic or archaeological resource is uncovered or inadvertent discoveries are made of Native American human remains and associated funerary objects, sacred objects, or objects of cultural concern, all activities in the area will be halted and the DPG Cultural Resources Manager would be contacted, in accordance with procedure in DPG's ICRMP, and the associated standard operating procedure (SOP) #8, for the accidental discovery of archaeological resources or Native American artifacts. The Proposed Action is not a Section 106 action as it is a continuation of established activities; therefore concurrence with State Historic Preservation Officer is not required.

4.7.2 No Action Alternative

There would be no impact to cultural resources as a result of the No Action Alternative. The USAF would not renew its lease with DPG and activities at the Avery Area, a historical part of DPG, would no longer occur.

4.8 Socioeconomics

Potential socioeconomic impacts are considered significant if the Proposed Action or alternatives would cause:

- Substantial gains or losses in population and/or employment; or
- Disequilibrium in the housing market, such as severe housing shortages or surpluses, resulting in substantial property value changes.

4.8.1 Proposed Action Alternative

The 2003 DPG EIS determined that with future programs at DPG:

- Minority and low-income persons would not be disproportionately affected compared to the general population;
- DPG would continue as a major Tooele County employer and is a stable economic influence; and
- Minimal permanent population changes would occur.

Potential socioeconomic impacts from the USAF renewal of its current lease and continuation of 388th RANS activities would not be significant. Changes to the existing socioeconomic baseline conditions in the ROI would be negligible as a result of the Proposed Action. The approximately 100 existing full-time DoD and civilian personnel would remain at DPG and no new personnel are anticipated.

There are no anticipated impacts to education facilities, law enforcement, and fire protection under this lease renewal. Beneficial impacts to socioeconomics from implementing the Proposed Action include benefit to the community through greater employment opportunities, income, and housing occupation.

4.8.2 No Action Alternative

Under the No Action Alternative, changes to the existing socioeconomic baseline conditions would occur. Training of air crew and weapons systems would cease without renewal of the current lease, resulting in personnel relocation away from DPG or loss of local jobs. Some minor, insignificant negative impact to housing, income, and unemployment could occur as the workforce is diminished and relocated.

The economic impacts of the No Action Alternative were estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect impacts resulting from a given action. Changes in spending and

employment associated with not renewing the current lease represent the direct impacts of the No Action Alternative. Based on the input data and calculated multipliers, the model estimates changes in sales volume, income, employment, and population in the ROI, accounting for the direct and indirect impacts of the No Action Alternative. For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated impact of the No Action Alternative falls above the positive RTV or below the negative RTV, the impact is considered to be significant. For this analysis, the ROI is Tooele County, Utah and a change in local expenditures is not anticipated.

Based on the EIFS model, the No Action Alternative would result in a decrease in employment of -1.06 percent. To have a significant negative impact, a decrease in employment would have to be realized below the negative RTV of -3.96 percent. The No Action Alternative would not significantly impact other economic indicators estimated by the EIFS model, including sales volume, regional personal income, and population (-1.93, -1.24, and -0.75 percent change for these indicators, respectively). The negative RTVs for their respective categories are -9.98, -10.15, and -1.9 percent. The EIFS model output for the No Action Alternative is provided in Appendix A.

4.9 Environmental Justice

Potential environmental justice impacts are considered significant if the Proposed Action or alternatives would cause disproportionate effects on low-income and/or minority populations. Potential impacts to protection of children are considered significant if the Proposed Action or alternatives would cause disproportionate effects on children.

4.9.1 Proposed Action Alternative

Potential impacts from lease renewal to low-income and/or minority populations and children would not be significant. Changes to the existing baseline conditions in the ROI would be negligible as a result of the Proposed Action.

4.9.2 No Action Alternative

Under the No Action Alternative, there would be no changes to low-income and/or minority populations, or disproportionate effects on children.

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5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 Cumulative Effects

Cumulative impacts are those potential environmental impacts that result "from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects.

This section briefly summarizes past, current, and reasonably foreseeable future projects within the same general geographic time and space as the Proposed Action. Because the impacts of the proposed project generally would be minor and localized, the USAF focused its evaluation of cumulative impacts of the Proposed Action and reasonably foreseeable future actions within DPG. The past, current, and reasonably foreseeable projects identified below, make up the cumulative impacts scenario for the Proposed Action.

5.1.1 Past and Current Actions

DPG has been used for military missions since the 1940s and has continuously been developed as DoD missions, needs, organization, and strategies have evolved. Development and operation of the installation has impacted thousands of acres with synergistic and cumulative impacts on soil, wildlife habitats, water quality, and noise. Beneficial effects, too, have resulted from the operation and management of DPG including increased employment and income for Tooele County, the city of Tooele, and its surrounding communities; consumptive and nonconsumptive recreation opportunities; and increased knowledge of the history and pre-history of the region through numerous cultural resources surveys and studies. Management and operation of the 388th properties has also provided numerous beneficial effects for socioeconomics resources.

5.1.2 Reasonably Foreseeable Actions

Two reasonably foreseeable future actions at DPG were identified and include the Joint Land Attack Cruise Missile Defense Elevated Netter Sensor System (JLENS) and Wig Launch Modification. Both of these actions are located near the Wig Launch site used by the 388th RANS and are described in Table 5-1.

Table 5-1. Reasonably Foreseeable Actions on DPG

Project Name	Project Description	Distance from 388th Properties (approximate)
Joint Land Attack Cruise Missile Defense Elevated Netter Sensor System (JLENS)	The JLENS is being developed as an early warning sensor system to meet the threat of tactical enemy air attack systems, which fly at low altitudes to avoid detection by surfaced-based weapon systems. The elevated (airborne) sensor of the JLENS system extends communication ranges, overcoming terrain restrictions associated with ground-based sensors. The drones would be launched from the Wig Mountain Launch and Recovery Site traveling south and returning north for flight termination on DPG through an established flight corridor.	0.5 mile east of the Wig Launch Site and includes Perkins Point
Wig Launch Modification	The 388th RANS proposes to modify the existing Wig Launch infrastructure to accommodate the mission. The modification would add a 20-foot by 115-foot concrete pad west of the existing launch pad.	0 mile

5.1.3 Summary of Cumulative Impacts

The consequences of the Proposed Action on noise, water resources, hazardous materials and waste, cultural resources, socioeconomics, and environmental justice would be minimal to negligible. The Proposed Action, when combined with other potential projects within the area, may have minor, short-term cumulative effects on the air quality, earth, and biological resources as discussed below.

The JLENS project and construction of the new Wig launch pad would increase particulate matter, vehicle emissions, and wind-borne dust resulting in direct short-term impacts to air quality. These emissions would not result in significant cumulative impacts to air quality because the projects are temporary and no significant impacts to air quality would occur from the Proposed Action Alternative.

Minor cumulative impacts to soils would occur from the construction of the new Wig launch pad as land is converted to impervious surfaces (2,300 square feet). Additional soil disturbance from the impact of the recovered drones under the JLENS program would occur but be localized. Onsite soil erosion would occur; however, implementation of standard best management practices (BMPs) would minimize erosion and potential cumulative impacts to soil.

The launches and flights under the JLENS program would be minimal (approximately 6 to 20 over a period less than a month) and occur in areas that are currently flown over by other aircraft. The relative infrequent activity within the flight path may have short-term cumulative biological impacts on avian species, especially golden eagles, if other testing in the Wig area under the Proposed Action Alternative is conducted at the same time. Impacts would be negligible if projects are temporally separated, if activities are limited during the nesting season, January through July, and the DPG eagle monitoring plan is implemented.

5.2 Irreversible and Irretrievable Commitment of Resources

5.2.1 Adverse Environmental Effects Which Cannot be Avoided

Unavoidable adverse impacts associated with the Proposed Action Alternative include:

- A minimal increase in localized noise during testing and training; and
- Soil disturbance during operation of the leased facilities

Continual operation of the 388th facilities would cause unavoidable temporary noise emissions that would impact personnel conducting the operations. Impacts from soil erosion would occur from continual training over the BSP, TS1 and TS3 sites as well as through the movement of tanks to the Wig Tank Maintenance area and targets to and from the Wig Target Staging Area. Overall, impacts of the proposed facility on the environment and human health would be minimal.

5.2.2 Relationship Between Short-term Uses of the Environment and Long-term Productivity

CEQ regulations that implement the procedural requirements of NEPA require consideration of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity (40 CFR 1502.16). Short-term use of the environment, as used in this EA, is that used during the life of the project, whereas long-term productivity refers to the period of time after the project has been decommissioned, the equipment removed, and the land reclaimed and stabilized. Continual operation of the 388th properties would require short-term uses of land and other resources. The short-term use of the leased properties would not affect the long-term productivity of the area. If it is decided at some time in the future that the installation, specifically the leased property areas, has reached its useful life, the facility and foundations could be decommissioned and removed, and the site reclaimed and revegetated to resemble a similar habitat to the pre-disturbance conditions.

5.2.3 Irreversible and Irretrievable Commitment of Resources

A commitment of resources is irreversible when its primary or secondary impacts limit the future options for a resource or limit those factors that are renewable only over long periods of time. Examples of nonrenewable resources are minerals, including petroleum. An irretrievable commitment of resources refers to the use or consumption of a resource that is neither renewable nor recoverable for use by future generations. An example of an irretrievable resource is the loss of a recreational use of an area. While an action may result in the loss of a resource that is irretrievable, the action may be reversible. Irreversible and irretrievable commitments of resources are primarily related to construction activities.

For the Proposed Action, resources consumed during operation of the 388th mission, including labor, fossil fuels, and construction materials, would be committed for the life of the project. Nonrenewable fossil fuels would be irretrievably lost through the use of gasoline- and diesel-powered equipment. The proposed project would commit 6,680 acres for the continual operation of the 388th activities. Although these resources could be reclaimed in the future, it is unlikely that they would be restored to their original conditions and functionality. Therefore, these commitments are considered irreversible.

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APPENDIX A

Economic Impact Forecast System Report

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APPENDIX A. ECONOMIC IMPACT FORECAST SYSTEM

This appendix contains the Economic Impact Forecast System (EIFS) model output for the No Action Alternative.

EIFS REPORT

PROJECT NAME

Dugway EA

STUDY AREA

49045 Tooele, UT

FORECAST INPUT

Change In Local Expenditures	$0
Change In Civilian Employment	-100
Average Income of Affected Civilian	$60,000
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.89	
Income Multiplier	1.89	
Sales Volume - Direct	($4,824,000)	
Sales Volume - Induced	($4,293,360)	
Sales Volume - Total	($9,117,360)	-1.93%
Income - Direct	($6,000,000)	
Income - Induced)	($840,698)	
Income - Total(place of work)	($6,840,698)	-1.24%
Employment - Direct	-126	
Employment - Induced	-23	
Employment - Total	-150	-1.06%
Local Population	-249	
Local Off-base Population	-249	-0.75%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	15.54 %	8.04 %	4.34 %	7.05 %
Negative RTV	-9.98 %	-10.15 %	-3.96 %	-1.9 %

****** End of Report ******